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THE ARCHITECTURAL FORUM

FOR QUARTER CENTURY THE BRICKBUILDER

THE FUTURE OF ARCHITECTURE

By C. Stanley Taylor

STEEL FRAMING FOR
LONG-SPAN CONSTRUCTION

By N. A. Richards, Assoc. Mem. A. S. C. E.

ARCHITECTS' ACCOUNTING SYSTEM
prepared for the
MICHIGAN SOCIETY OF ARCHITECTS

OFFICE BUILDING OF THE
WOMAN'S BENEFIT ASSOCIATION
OF THE MACCABEES

Richard E. Schmidt, Garden & Martin, Architects

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JANUARY 1919

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THE EDITORS FORUM



A YEAR of extremely interesting developments is begun for the architectural profession. The country is now turning to the building up of peace-time activities and much of the readjusting that will take place in the next few months will have an important bearing on the work of the profession. Constructive thought and action are needed to make this period of readjustment as brief as possible; well considered optimism and confidence in its successful outcome must characterize the work of those in positions of influence. Architects hold this position in the building world and, because of the basic nature of the building industry, they should expend their whole energy in bringing about its speedy rehabilitation. To count as a compelling force this action should be reinforced by a unity of purpose and a definite conception of the profession's rightful province. Unfortunately there are many opinions expressed today on the proper functions of architects that differ widely from one another, some of great merit, others of little or none. Underlying them all there is, however, a strong conviction that the influence of architects should be increased and that their position in relation to the commercial world should be strengthened. With this thought we wholly agree, and it is our aim to render as large a service as we are able in crystalizing present-day opinions, in the hope of seeing these results take place.

We have no interest in adverse criticism when it is of the mere fault-finding genre. Such expressions are destructive and serve no useful purpose, and often do infinite harm. Constructive aid is only given by a clear analysis of conditions as they exist, showing by careful reasoning where faults occur and offering new methods designed to overcome them. Such is the character of the series of papers, "The Architect of the Future," the first of which is published in this number. The others will appear in consecutive issues and consider in detail the following points of vital interest: The architect as a business man; sales organization in an architect's office; personal supervision of building construction, by the architect; architects and finance and architects and advertising.

MODERN practice of architecture has become an infinitely complex application of many sciences, in addition to the art of planning and designing buildings of beauty. Present indications are that architectural practice will be carried on through well co-ordinated office organizations that will embrace in themselves, the varying talent needed to consider properly all building problems. Design and construction, the latter involving engineering science, are so interdependent that to insure the best results they must be

carried on simultaneously and with a common understanding of the results being worked for. A better mutual appreciation of the work of the architect and engineer must be developed. This journal has in its editorial program always afforded a generous measure of space to construction problems, but during this year more space and greater emphasis will be placed upon architectural engineering than in any previous year. The newest developments in steel and concrete construction, fireproofing methods, economical use of materials and standardization plans leading to greater efficiency in the construction and use of buildings will be considered in an ample and authoritative manner. This work is begun in this issue in the article by N. A. Richards, treating of steel framing in long-span construction, illustrated from drawings especially made.

THE complexity of the architect's duties further calls for an efficient business organization for the transaction of financial dealings with clients and contractors. In recent issues we have described in considerable detail the systems that have been evolved in a number of representative offices, where a large volume of work is done each year. In this issue we are able to present a special report of a system of accounting, prepared by accounting specialists for the Michigan Society of Architects, that is intended to serve alike the small or large office with minor modifications. It is important to know on what kind of commission there is loss or profit, so that proper fees for different work may be determined, and in securing accurate data, there is no more valuable aid than systematic accounting.

THERE will be no less attention given in THE FORUM to architectural design than in the past; in fact, greater efforts will be made to present well written and illustrated articles on architectural precedent and the development of style. In announcing a wider range of subject matter, its editors do not forget that the profession of architecture is fundamentally concerned with the creation of beautiful buildings, and its particular province, the harmonizing of utilitarian demands with beauty and giving orderly arrangement to practical requirements. These marks of the profession are basic and unchanging, but today's developments in the business world and in the agencies through which the architect secures his results are necessitating the assumption of additional duties by the profession in order that its primary objects may be realized, and it is the broader field of architectural practice thereby created that THE ARCHITECTURAL FORUM aims to serve.

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THE ARCHITECTURAL FORUM

VOLUME XXX

NUMBER 1

CONTENTS for JANUARY 1919

PLATE ILLUSTRATIONS

	Architect	Plate
UNION HIGH SCHOOL, PALO ALTO, CAL.	<i>Allison and Allison</i>	1-3
OFFICE BUILDING, WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.	<i>Richard E. Schmidt, Garden & Martin</i>	4-8
COMMUNITY BUILDING, HEMENWAY PARK, WATERTOWN, CONN.	<i>Electus D. Litchfield</i>	9-11
HOUSE, MRS. R. W. RIVES, SANTA BARBARA, CAL.	<i>Reginald D. Johnson</i>	12, 13
HOUSE, ANDREW MORISON, ESQ., MONTCLAIR, N. J.	<i>William Edgar Moran</i>	14-16

LETTERPRESS

	Author	Page
VIEW ACROSS CITY HALL PARK, NEW YORK CITY	<i>Frontispiece</i>	
THE EDITORS' FORUM		17
THE FUTURE OF ARCHITECTURE	<i>C. Stanley Taylor</i>	1
RECENT DISTINCTIVE SCHOOLHOUSES IN CALIFORNIA	<i>William C. Hays</i>	5
Part III. Concluding Paper.		
GRADE SCHOOL BUILDING, SANTURCE, SAN JUAN, PORTO RICO	<i>Adrian C. Finlayson, Architect.</i>	11
PROPOSED GENERAL ACCOUNTING AND COST SYSTEM FOR THE MICHIGAN SOCIETY OF ARCHITECTS		13
BUILDING CONSTRUCTION IN 1919		22
STEEL FRAMING FOR LONG-SPAN CONSTRUCTION	<i>N. A. Richards, Assoc. Mem. A. S. C. E.</i>	23
NOTES ON THE GOVERNMENT HOUSING DEVELOPMENTS		29
OFFICE BUILDING, WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.		31
EDITORIAL COMMENT		32

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VIEW ACROSS CITY HALL PARK, NEW YORK CITY

From photograph by John Wallace Gillies

This illustration is unique in recording three phases of American architecture, the City Hall, old Post Office, and the Woolworth Building.

THE ARCHITECTURAL FORUM

FOR QUARTER CENTURY THE BRICKBUILDER

VOLUME XXX

JANUARY 1919

NUMBER 1

The Architect of the Future

PART I

By C. STANLEY TAYLOR

Editor's Note.—This is the first of a series of articles dealing with practical subjects which are to prove important factors in the development and administration of the architect's office during the reconstruction period. Here the profession of architecture and American practice during past years is given the acid test of business logic. Contrary to the usual custom, however, the writer not only defines problems and conditions which are confronting the architect today, but offers logical solutions of such problems. Mr. Taylor is Project Engineer in the office of Mann & Mac Neille, Architects and Construction Engineers, of New York.

IN common with all great national and international disturbances, the world war has shaken the very foundations of the economic structure of the United States to which industrial, commercial and social activities have contributed gradual development during many past years. The pressure of war conditions has quickened these contributions. Even as each day has added pages to the military and geographical records of the world, so history has been made overnight in the fields of production and transportation. Precedents were swept aside by emergency. Unheard-of sums of money have passed in the greatest financial transactions of the ages. Building projects, which in ordinary times would receive weeks of study and take months for construction, have been planned in days and built in weeks. So in the office of the architect history has been made and a future of unlimited possibilities is promised to those of the profession who may wisely combine artistic temperament with practical business administration. In these few words we have an indication of past failure, a definition of true service, and a premonition of future success.

We now enter the period of reconstruction, a period of vital significance to the architect, in that he has at last been brought squarely face to face with important issues bearing upon the future of his profession. If he has done war work, a pace never before equalled has been set in his office. His is a more efficient force, no longer accustomed to the easy-going methods of production employed in past

years, and eager for continued activity. The office of the architect who has had no war work has been generally idle. Some have closed their doors to wait for better conditions. All are eager for new work. Many, of receptive minds, sense a change—a new development in professional activities connected with the building profession. On many tongues in architectural circles are the terms "improved service," "better relations with the clients," "antique ethics" and others of equal significance. Warnings, too, are being sounded by the ultra-conservative, among which one of the favorites (which serves to sum them up) is "Avoid Bolshevism in the profession." Truly an interesting condition which proves that the architects have a reconstruction problem of their own and one of great import.

The opinion is unanimous that a tremendous volume of building construction is to be carried out in the United States during the next decade. The country was certainly underbuilt at the time our entrance into the war stopped all non-war construction. The need for buildings of various types expressed in many sections of the country constitutes logical proof that an active period for the architect may be expected. It is significant and important to note, however, the fact that the architect will not be able to get and hold business on the old basis. Increased national interest in thrift, economy and efficiency is to be directly reflected in building investment. The client will demand real service and efficiency of purpose in the design and construction of buildings of any type. Logically, the most successful offices will be those organized and prepared to render such service and to administer the expenditure of the client's funds in a businesslike and efficient manner.

During the war period there have been many complaints to the effect that the profession of architecture has not been credited or recognized by the Federal Government. The average architect complains that he has not had a fair share of war work. On the surface it might appear that there has been some ground for contention in this respect. If, however, we fairly apply the old law of cause and effect in analyzing this situation, we come to the

certain and unbiased determination that if there has been a lack of appreciation of the architects' ability it is none other than the fault of the architectural profession that such a condition exists.

Some months ago the writer was told the experience of an architect of good reputation who had been forced through lack of work to give up his office. He decided to visit Washington and apply for a Government position where his training and experience would make him a useful unit in war activity. As an architect, he did not get far and from a friendly source he received the following advice:

"Don't say you are an architect when you apply for work here. Say you are a construction expert or a structural engineer."

Briefly, he followed the advice and in two days was at work. The relation of this experience is purely incidental, but it has peculiar significance as an indication of the popular state of mind in regard to the architectural profession, of which there have been too many similar indications in the past few years. It is a sad fact that to the layman client architectural services constitute an evil (and an expense) to be endured, rather than a valuable service to make certain the efficient and economical carrying out of a business project involving building construction and design.

In the Orient there is in common circulation in several languages a proverb which, freely translated, has application to the present-day case of the architect. It is as follows: "He who meets failure has never met himself." Perhaps if we of the architectural profession will pause long enough to "meet ourselves" we shall be better able to solve correctly the problems which face us during the reconstruction period in America.

It is to be hoped, therefore, that all statements which may be made in these articles will be accepted as emanating from a sincere desire to be of constructive service in helping to place the profession upon a sound and prosperous basis through the reconstruction period and during the years to come — a desire to establish better understanding and mutual respect between the buyers and sellers of architectural services — to assist in maintaining the traditions and safeguarding the future of one of the finest and most valuable professions contributing so largely to the success of our social and economic development.

If we admit weakness in the present situation, if we find difficulty in convincing the prospective client of the value of professional services — if we come in contact with well founded criticism (and there are few of us who do not), we certainly must admit an element of failure in the past. Wherein, then, has the average architect and the profession failed?

Primarily, too much stress has been laid upon professionalism and too little attention given to the

practical business aspect of architecture as an applied science. We have at times heard statements to the effect that our schools are to blame for this condition. Certainly in the schools the artistic temperament, noted in all its phases for unbusinesslike qualities, is highly developed. But we must not overlook nor belittle the importance of this element. The creative designer will always play an important part in architectural work. Nowhere is there better evidence of the admonition against the serving of two masters by one man. Ages have proven that the artist cannot be the business man. Therefore the schools are not at fault in this respect. The fault lies in the organization of the architect's office!

To effect the desired combination of art, engineering and business we must bring together the artist, the engineer and the business man. In no other manner can the problem be successfully solved, the inter-relation of these activities is too close. If he is to have continued success the architect can no longer hide his weaknesses in dim cathedral light, nor can he disguise a short-sighted business policy behind a mask of "professional ethics!"

World business has recently received a most severe shaking-up and the predominant fact that has been brought to light is that great victories have been achieved by the application of sound business principles to every art of war and commerce.

Owing to the lack of a sound and clearly determined business policy, and in many cases directly due to the inability to render true service from the business viewpoint, it has been difficult for the architect to maintain cordial relations with his client. He has failed to appreciate the client's viewpoint and has often given him a building designed for special service which has not proven efficient. Misunderstandings and disagreements, easily avoidable, have arisen because of failure to keep the client properly advised of the progress of the work. The architect, as agent of the owner, has in many cases administered funds in an uneconomical manner, which sooner or later has come to the client's attention.

Reverting for a moment to the parlance of the salesman, an architectural "job" is peculiar in that if properly handled it must be "sold" no less than three times to the client: once in the first contact, when the architect is retained to make plans and sketches; again, when working drawings, quantities and final estimates are complete; and lastly, when the building is finished. Many clients have been dissatisfied because they have not been made to understand the buildings built for them. Details to which they take exception become acceptable on explanation. In many cases the architect is too prone to forget a building when it is finished unless called back by some complaint of the owner or tenant. A highly important factor toward success is to keep in touch with finished work. Many complaints and

failures are the result of poor management and maintenance, rather than the fault of design or construction, but the architect is invariably blamed unless he is on the ground to defend himself.

There are those who will say that the maintenance of a business organization in an architect's office, for the purpose of meeting these conditions, is unethical and consequently, unprofessional. We are interested in referring such critics to that present-day source of artistic inspiration, the country where we send our young architects for finished training at *L'Ecole des Beaux Arts*. In France it is quite usual for an architect who designs an apartment house to continue in charge of the building after it is completed, collecting rents, managing repairs and carrying on the business of the building as the owner's agent. In this manner the canny investor insures efficient study of his problem, resulting in a design which will bring the maximum of return on his investment.

We are not radically suggesting that the architect take over the activities and emoluments of the realty manager, but it is certain that by establishing and maintaining a closer relationship with the finished job the number of dissatisfied clients can be materially reduced and office reputation will gain apace.

Conditions seem to indicate that the progressive architectural office shall not be a one-man activity. As time passes, less dependency can be placed on getting work through personal friendship and influence. Better results are being demanded and reputation is to be built on performance. Large contracting firms are rapidly assuming the position of competitors for the complete design and construction of buildings. In such offices architectural departments are being formed and the legitimate field of the profession is invaded. The only protection against such activity is the creation of an organization which is capable of rendering a complete and economical service to the owner.

In view of these facts it can readily be seen that the architect's organization is to embrace several important activities. These will be touched upon but briefly in this article but in following articles their function, methods and personnel will be considered in detail.

First, it must be realized that architecture has passed the stage of merely supplying a demand or satisfying a need. It has reached the point where by constructive reasoning a demand may be created. This function of the office involves imagination, practical knowledge of business procedure and ability to convince a prospective client of the feasibility of a business proposition involving building construction. It requires powers of organization and the definite ability to create a project, finance it and sell the idea to a prospective client. Some few architects have for years successfully built up their business on this basis, but the average architect waits

until the preliminaries are complete and then steps in with many others to ask for the work.

Salesmanship of no mean ability is required to keep the office busy. Why should we scout the theory of a sales department in an architect's office, when this activity is continually being carried on. The only difference between the selling of real estate and the selling of architectural service is that in the first case the work of selling is well organized and efficient while in the architect's office it is carried on spasmodically and in a haphazard manner. The ethics of salesmanship and the ethics of architecture are compatible and may well be combined by the architect without loss of dignity or professional standing.

On the mooted question of architectural advertising, carried out in a dignified manner, we take a most positive stand. The architect who has real service to sell should advertise that fact. We need not dwell on recent action, which has been taken by the American Institute of Architects in removing restrictions on advertising by its members. We need but consider facts. In every case where the architect has had an opportunity to get publicity by having photographs and drawings published under his name he has hastened to accept. The architect insists almost invariably that when the manufacturer of face-brick or tile or steel illustrates an advertisement with one of his buildings that his name shall be shown as architect. This is called trade courtesy and is done as a matter of policy, but behind the act is the architect's demand for publicity — a legitimate demand. One of the world's greatest advertising experts has but recently stated that the reason the architect does not advertise is because he does not wish to bear the expense. If this be true, are we not here masking an unbusiness-like policy with a cloak of antedated ethics?

In a discussion of the subject of publicity it might be well to emphasize the fact that as an organized profession architects have not been active in informing the public as to the exact nature of their work and the value of their services. No other collective business activity, entrusted with the expenditure of vast sums of money in commercial activities, has been so backward in public education. Little has been done to warn the public against the inefficient or unscrupulous architect who in many cases has contributed effectually against his profession. In general, and particularly through current opinion, the mistakes of the architect receive more publicity than his many successful accomplishments. Collective advertising, not of the individual but of the profession, has possibilities which in other fields have proven strong weapons of defense.

Another fact which the architect often overlooks is that the client has no opportunity to realize how much work is really done for the money he spends.

He has no conception, for instance, of the time and thought required in making sketch plans. To the average mind a plan is a plan, nothing more. The average impression is that the plans and sketches of a building are worked out speedily and with little effort. Here again is an opportunity of establishing better relations with the client by more careful and detailed explanation, not only of the reasons for this particular design but of various other ideas tried and found wanting.

Much time and money are wasted by impractical office administration. In the first place, it should be realized that time spent with the client in fully determining his wishes and ideas will save much time over the drafting board. The average architect fails to get the client's viewpoint because he does not take sufficient time to do so, depending rather on costly experiment.

If the office is properly organized the major responsibilities will be placed on various individuals, thus insuring smooth operation and efficiency. The business of an architect's office naturally divides itself, presumably, into design, engineering and construction, as far as production is concerned. By routing each job and correctly placing the requirements, all data may be produced as required with the minimum of duplicated effort and inefficiency. An organization developed on a business basis has the double value of reducing overhead and impress-

ing the client who judges by business standards.

Every job which comes into the office should be analyzed with care. Because a client has decided upon a certain type of building or a certain location does not constitute final proof that his decision is best. Before design is started a careful investigation of the project should be made. It should be considered from the real estate viewpoint. The best service an architect can render is sometimes advice which would seem foreign to his profession and may be from the financial, realty or manufacturing viewpoint.

Occasionally the profession of architecture is likened to that of medicine, in a discussion of ethics. A patient does not often come to a doctor with the statement that he has a certain disease or weakness and ask for its treatment. But this is what the average architect has been satisfied to have his client do.

If architects will realize the value of a more businesslike conduct of their practice the time will soon come when they will be consulted in an advisory capacity on building investments, improvements and trade extensions. They will be accorded a more definite place in the commercial scheme and will be looked upon less as dreamers and more as experts. At that time, as the patient comes to the doctor with *symptoms*, so the client will come to the architect with *problems* rather than conclusions!



Grammar School at Colton, California
Allison and Allison, Architects



General View of Palo Alto School Group from the West

Recent Distinctive California Schoolhouses

PART III. CONCLUDING PAPER

By WILLIAM C. HAYS

THE time was the night of an important state election during the brightest — and blackest — domination of Senator Mathew Stanley Quay. The place was the Union League Club in Philadelphia. The speaker was one of the substantial "leading" citizens (Heaven help the others!) of that pattest of all stand-pat states. Speaking of the election by the Republican party which had just been assured of a Quay candidate of rather disreputable record, this leading citizen was heard to say, "I would vote for Judas Iscariot if he was the regular Republican candidate." We have here a fine example of the Simon-pure stand-patter Republican of what one hopes may be a bygone regime, in view of the epigrammatic definition that "a Stand-patter is still and cannot get in motion while a Progressive is in motion and cannot stop." But while it is true that any one holding to any such fixed course as this is on a wrong track, it is not to be supposed that an unswerving "middle of the road" is in all respects necessarily a better course. In fact, it is probably better to take the risk of occasional blunders, and use some individual judgment but let us at least see that what we do is definite. For the truth is that the man or woman who is not mentally pliable under rational convictions is mentally either dying or dead. No one who has operated a player piano but will recognize the importance of the wandering line printed on

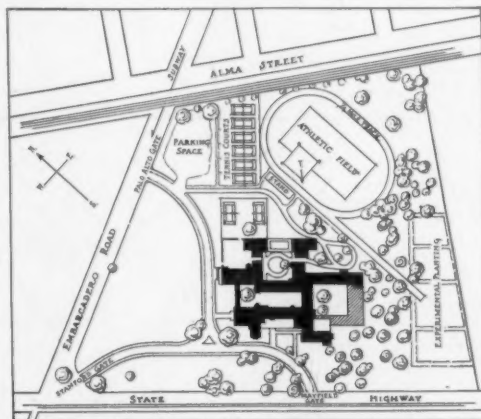
the roll and which, when followed by an indicating needle, causes modulation in the expression. In some such sense is the course followed by thinking men and women varied. If we may change the figure — Life is a road which passes through a rolling country, and one to drive there safely must be alert with brakes on or throttle open, each in turn. It is largely because we are living in days when materialism is a constant menace against which all vigilance is

needed that so much emphasis has been placed in these papers on the importance of broadening our views of school architecture.

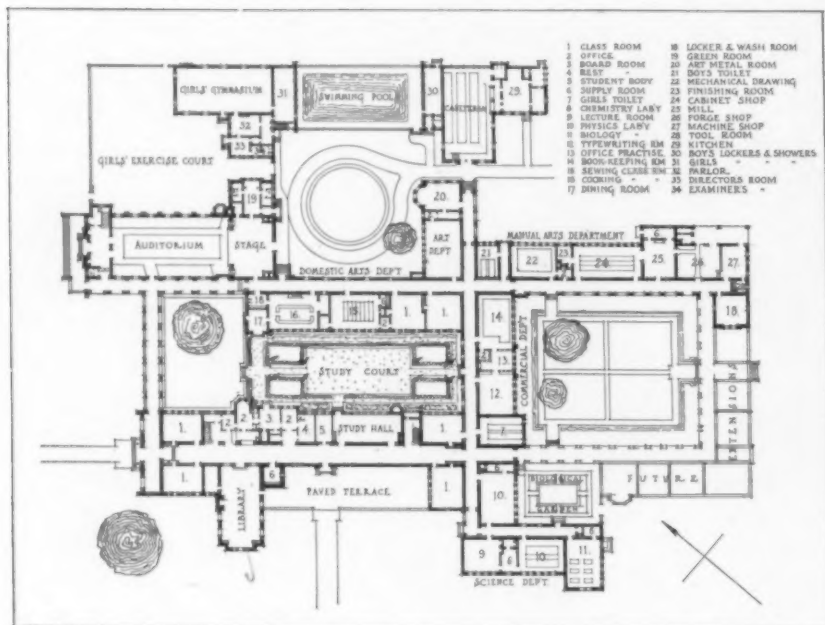
In our consideration of the schoolhouse problem we are prone to narrow down the point of view so as to include only the teachers and pupils. We are likely to assume that all phases of the problem have been met if the building, when built, answers well the various requirements of supervision and teaching, from the point of view of the administration;

and the usual problem of recreational and study facilities as well as sanitation and hygiene, from the point of view of the pupils.

Our study of the problem, however, is at this stage still far from complete, since there is at least one other highly important aspect of which notice must be taken. For the schoolhouse is not only a utilitarian scholastic implement; most important and largest of all utilities though it is — but it is, whether



Plot Plan of Union High School at Palo Alto



First Floor Plan. Union High School, Palo Alto, California
Allison and Allison, Architects

architecturally good or bad, a conspicuous feature in village, town or city to be noted by every passerby and to make its imperceptible impress on the taste of the community. The architectural character of the school building or buildings advertises to the passing world far more than is usually realized, an idea of the inner being of the community life. The schoolhouse may be an open proclamation of cheap pretentiousness — on the one hand, or, on the other, of a spirit of penuriousness and a lack of appreciation of the importance of the coming generation; still again, it may express a spirit of vain wastefulness and extravagance in uselessly spending money for superfluous gewgaws or unnecessarily expensive, and consequently inappropriate materials. If there is any one fact which has been frequently demonstrated to the initiated, but unnoticed by the passing public, it is that simple, inexpensive and indigenous materials may be wrought by the alchemy of the artist into masterpieces, while side by side with such buildings there

are no "fine" materials anyway; and, meanwhile, that there may be fine use of *common materials* is not to be questioned or denied.

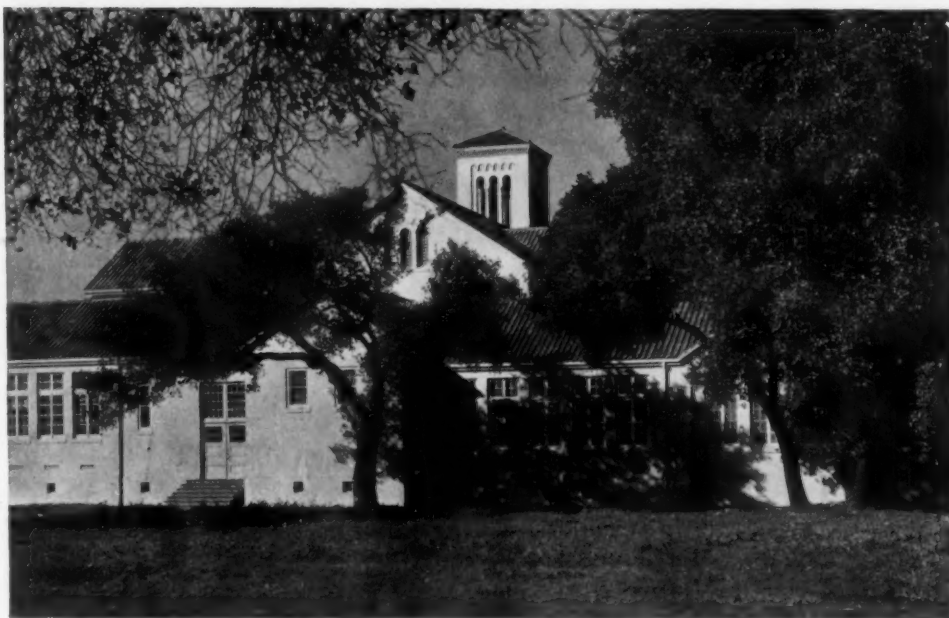
In still another sense, too, the use of very expensive materials is unwise, even if there were money available to warrant the expense; because it may be safely assumed that extensions will be needed in future, and such extensions, when made, always involve partial destruction or encasing of existing walls.

A school, like a college or university, is not a lifeless thing but is rather a living and growing organism which may at any time, through various causes, require greatly increased quarters. An addition to the building is then unavoidable, unless there is space available for a separate building and even then only when such separation from the main building will not handicap the work.

But not only is the choice of inexpensive materials wise — from the point of view of securing the largest soundly constructed building possible, within a limited appropriation — but it should be



View in Small Court Adjoining Auditorium
Union High School, Palo Alto, California



View from the Southeast, Union High School, Palo Alto, California
Allison and Allison, Architects

borne in mind that even our best buildings will some day, no one knows how soon, be superannuated. We are not more sincere in attacking our school problems than were the generations before us, who presumably in their time built to the best of their knowledge and after making all proper inquiry and investigation. They were no ignoramuses, nor were they either unintelligent or negligent in the performance of their duties, and yet we know that the school buildings of thirty or forty years ago are now virtually useless in view of our present conceptions of the problem. If, therefore, they are destined for the scrap yard, there is no reason why we should assume that *our* buildings will last forever. Ours too will join the great majority of the *passé*.

Reference to the illustrations which have been used with this series of articles on California schoolhouses will doubtless show that although little, if any, special mention has been made of the influence of materials on architectural expression—almost without exception the buildings themselves have illustrated this principle of the effective use of modest materials.

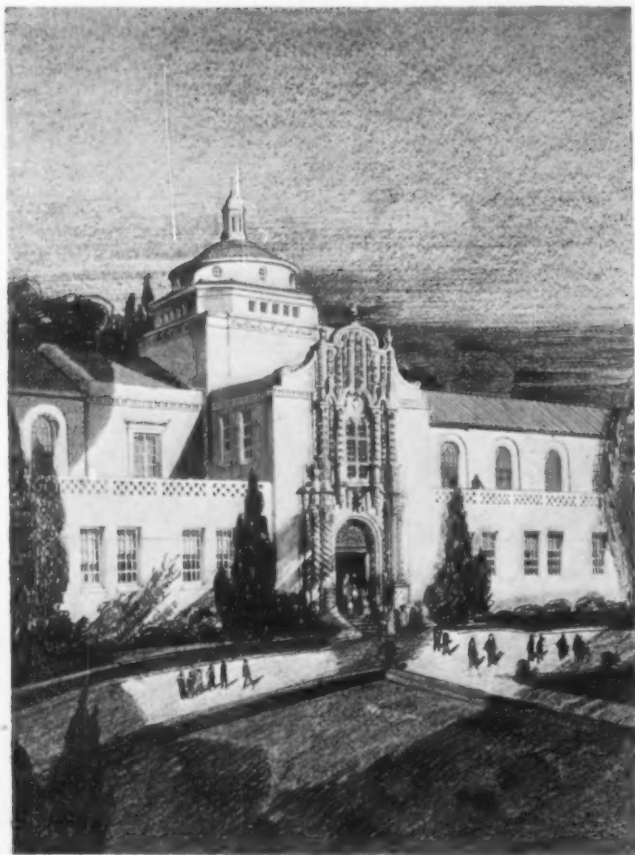
Of the primary and grammar schools it was shown that the irregular, unconventional plan is a type often used, and this type, while less frequently found in the institutions of high and normal grades, is not unknown. An

example of the possibilities latent in irregularity of plan is seen in Messrs. Allison & Allison's design for the Union High School at Palo Alto. The site, containing as it does thirty acres, is unusually large and is virtually flat land. It is dotted with broad-spreading live-oak trees which it was the wish of all concerned to save if possible. The location is at the acute intersection of two streets, the apex of the angle pointing toward Leland Stanford, Jr., University, which is near by. One of the streets leads off toward the

residence district of Palo Alto, while the State Highway, on the other side, will be the approach for a considerable number from the town of Mayfield. Therefore it was natural to develop a scheme providing access through three gateways. The first concern of the architects was to make use of the clear spaces for certain open tracts, necessarily large, such as the football and athletic field, tennis courts and experimental gardens. There then remained the design and placing of the buildings themselves, and, with clear vision, it was urged



Loggia at Entrance to Administrative Quarters
Union High School, Palo Alto, California

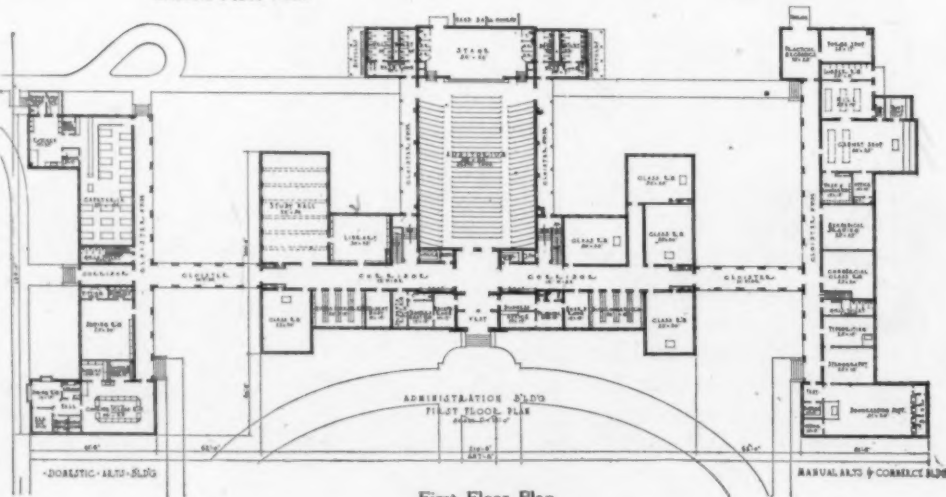
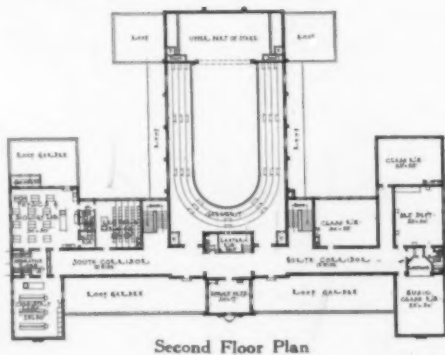


Detail of Administration Building
Union High School, Merced, California

that the problem was such that an irregular, rambling plan was the only type that could meet the existing conditions. Freed from the limitations which a formal or symmetrical composition imposes, the type selected was such as might be fitted in between some of the finer trees, these trees to be made use of, as well for practical convenience as for pictorial effect. Some of the trees had to be sacrificed, but they were few, and unimportant. From this point onward the problem in designing the building group must have been a fascinating one, leading, as it did, to the development of all sorts of charming and unpremeditated features. The *parti* also has the further virtue that it allows latitude in the groupings of departments, to best advantage, both within and between themselves.

Study of the plan reveals the skill of the designer in solving these problems; the result reflects, too, a spirit of co-operation between the architects and the school authorities. The plan resolves itself into clearly marked elements. First is a general administrative group, which forms the fore-part of the composition. This contains—besides the administrative offices—the library, some general classrooms and a large study hall. An unusual feature is the outlook from the study hall toward a quiet, enclosed study court which is reached by a direct exit from the room, and by an interesting scheme of planting the court is indicated. The auditorium, a separate unit, is reached from this first group of rooms through an open, arcaded portico, but also has its direct entrance from the Palo Alto driveway. In addition to the classrooms for "cultural" studies, already mentioned, there are separate portions of the plan allotted to special departments. These include domestic arts, fine arts, manual arts, the commercial and science departments. Here again the advantage of informal plan composition is shown, in that no compulsory arrangement is imposed upon the designer, but that it is possible to relate the sequences of rooms, just as practical conditions may indicate. This is seen in the well lighted scheme for the manual arts shops,

the latter having its outdoor element, namely the biological garden, occupying the internal angle of the "L." Farther away from the classroom departments is the cafeteria, also the gymnasium, with its open air swimming pool. If the composition is open to adverse criticism, it is that the plan, being distributed over so great an area, involves a deal of travel in connection with the administration.



First Floor Plan
Union High School, Merced, California
Allison and Allison, Architects

Although the present articles are dealing with school buildings specially for high and normal grades, the recent completion of an interesting experiment justifies mentioning and illustrating here the Primary Group of the Lakeview School, Oakland, California, from plans by Julia Morgan. This group is across the street from, and an accessory of, the much larger and previously built Lakeview Grammar School. It occupies an irregular site, which is at some elevation above the curving front street. Owing to the fact that the Primary School had to be built from reserve funds, which became available only in small installments, some scheme of unit-type construction was inevitable. The problem was complicated, also, by the fact that there were some temporary "shacks" in use on the site

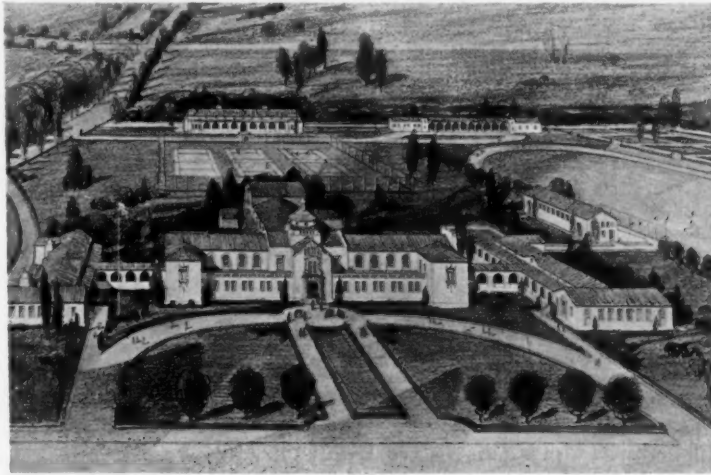
during the construction of the new building. The designer, however, seeing in this condition the chance to make a virtue out of necessity, laid out a group of three relatively small and entirely separate structures, each of four classroom capacity, and with the administrative rooms forming part of the central unit (which, of course, was the first one built). This *parti* avoided the box-like bulk of the usual schoolhouse, while it brought the several units down to some degree of harmony with the scale of the adjoining buildings, for it is in the heart of a

thickly built-up neighborhood of two-story residences; it also did away with tearing out and waste, in adding the successive units, while it minimized the interruptions of school routine while new construction was under way. Probably, also, it reduced the fire and panic menace that is ever present in the bulkier type of school building. Granting this "several buildings" solution of the problem, and planning them in an

informal, though balanced scheme, each unit might be treated individually, provided that the idea of harmony is kept in mind; and here there is no exact duplication or reversal, but each classroom has been so placed as to utilize the best exposures. The inter-relation of buildings to meet the working needs has been pretty successfully solved by connecting porches and

decks between the units, at both first and second floor levels.

The striking feature of this composition, however, is the long and broad play shelter, curving concentrically with the main street, and enfolding all three of the buildings. This shelter lies to the south and east of the buildings, is always warm and sunny on clear days, and no matter what the direction of the wind, on rainy days some part of it is protected; furthermore, it is so placed as to command an interesting view eastward towards the finely outlined hills of



Bird's-eye Perspective of Union High School
Merced, California



Primary Group, Lakeview School, Oakland, California
Julia Morgan, Architect

Piedmont. On behalf of the pupils, then, this portico meets at once material and spiritual needs; and to the passerby it serves the function of partly screening and at the same time bringing into unity of composition the three elements, alike yet individual, which mass up behind. It is probable that in certain respects this group of buildings would not measure up to all established standards of utilitarian school design; it would certainly be expensive to heat, for example, and the effort to separate the toilet pavilions makes them very remote, without their being especially private. But an unusual problem has been well solved, and this little group houses pupils who are comfortable in body and possibly, in such environment, contented in spirit. With the rapid growth of the newly planted gardens, there will be steady improvement as the buildings and their setting mellow together.

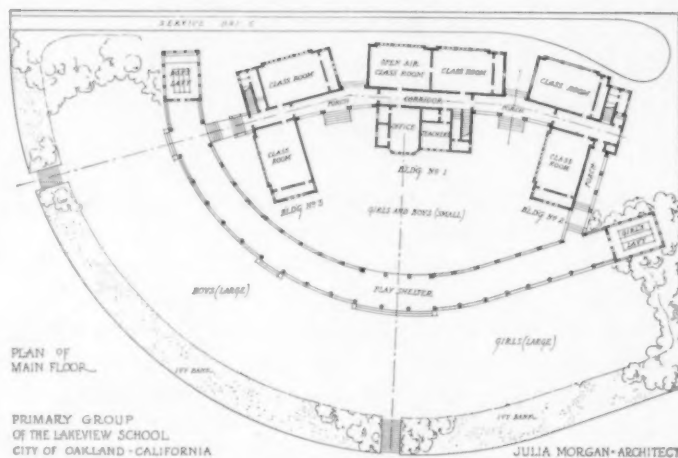
What, in substance, is deduced from all this discussion that is everywhere abroad concerning the school building? That it is an always living problem for educator and architect, for parent and community, each according to respective obligations.

Any community, then, if it is wisely studying in advance its school building problems (any "wise" community will do so), will place proper emphasis on its "declaration of intention." The authorities will see to it that their schools are placed on well located, ample sites—sites which have advantageous exposures as to contours, sun, prevailing winds, outlook, and—a consideration too seldom remembered—street or neighborhood noises. That these sites should be in proper relation to the present and prospective school population, of course, goes without saying. There will be a decisive policy that under no circumstances shall construction be skimped (which, however, does not argue for excess in the opposite direction), that the materials used shall be modest, and that responsibility shall be placed in the hands of architects known to be alive to and in sympathy with all aspects of the school

problem; known, also, to be thoroughly well trained, capable, enthusiastic and ready to spare no pains to get the best possible result in the solution of each several problem and in the use of the simple materials which alone are rightly available.



Play Shelter

PLAN OF
MAIN FLOOR.PRIMARY GROUP
OF THE LAKEVIEW SCHOOL
CITY OF OAKLAND - CALIFORNIA

JULIA MORGAN-ARCHITECT

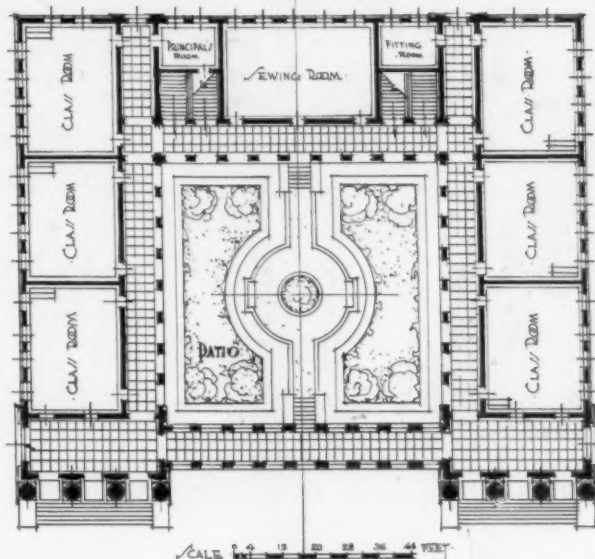


View of Palo Alto School from the East, Showing the Rear of Auditorium Wing

Grade School Building at Santurce, San Juan, Porto Rico

ADRIAN C. FINLAYSON, ARCHITECT

A DEVELOPMENT of the school plan similar to that adopted in California and described in the preceding article is illustrated by this school in Porto Rico. The tropical climate there gives rise to conditions not encountered in school buildings in the greater part of the United States proper. The even, semi-warm temperatures make heating or forced ventilation systems unnecessary. The chief consideration is that all rooms shall have the maximum number of openings, both in exterior and interior walls, in order that natural ventilation may have full play. In the present instance this is accomplished by a plan, no part of which is more than one room deep. It shows a simple U-shaped scheme, the rooms grouped about a central court and connected with one another by open-air corridors, the front end being closed with a continuation of the corridors, thereby tying the two deep wings together and providing seclusion and quiet for the court, which has received a garden treat-



Main Floor Plan

ment. The second floor plan is similar to that shown, the open-air corridors being repeated. Due to the sloping character of the land additional space is provided at the rear of the basement, giving a total accommodation of seventeen rooms.

The materials used in Porto Rico are more or less the same as those used in the United States, and while some are obtainable there, the most of them are imported, and in nearly all cases from the United States. Certain materials such as marble, and the various building stones, as well as the more expensive woods are not used, due to the prohibitive cost caused by transportation charges, the island being approximately fourteen hundred miles from New York and farther from New Orleans.

The building illustrated is of red brick manufactured in Porto Rico. Foundation walls, all floors, cornices, bands, key blocks and ornaments are of reinforced concrete. The brick is laid in Dutch cross



General View of Principal Facade



View of Interior Court

band with flush white joints five-eighths inch wide. All the exterior concrete work is made with white cement. The roof is of rough slate, graduated in thickness and ranging in color from deep purple through the various shades to light green. The red and white building, surmounted by the green roof and white cupola, contrasts agreeably with the green grass surrounding the building, the tall palms and mango trees, and the brilliant blue sky of the tropics.

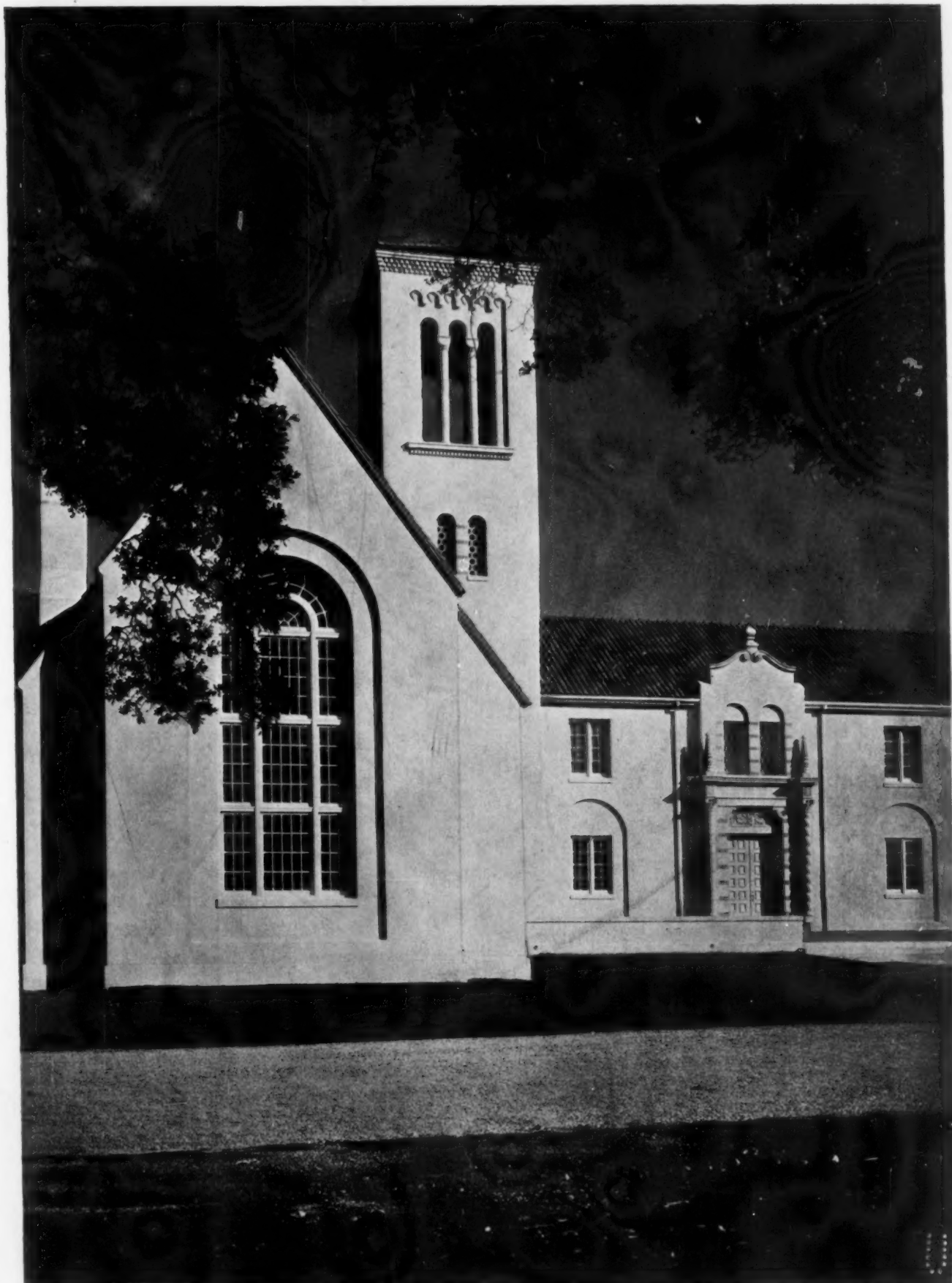
The classroom walls are tinted a light pearl gray to harmonize with the natural slate blackboards and white trim. The corridor floors and stairways are covered with red quarry tile laid with white joints. The main toilet rooms are located in the basement and finished in white vitreous tile and equipped with modern vitreous china fixtures.

The completed building cost \$100,000, and is a part of a general scheme for providing adequate school facilities for the city. This policy was inaugurated three years ago and to date four large buildings have been constructed totaling in cost \$420,000. Other buildings are contemplated, including a large

high school, now under way, which will cost about \$400,000. These buildings together with all other public structures are designed and constructed by the Architect of the Division of Public Buildings, Department of the Interior of Porto Rico. They comprise all types of government and municipal buildings, the greater part of which are schools and university buildings. They vary in cost from \$1000 to \$500,000, and in the past three years have totaled over \$3,000,000.



View of Rear



LIBRARY WING ON SOUTHWEST FRONT
UNION HIGH SCHOOL, PALO ALTO, CALIFORNIA
ALLISON AND ALLISON, ARCHITECTS

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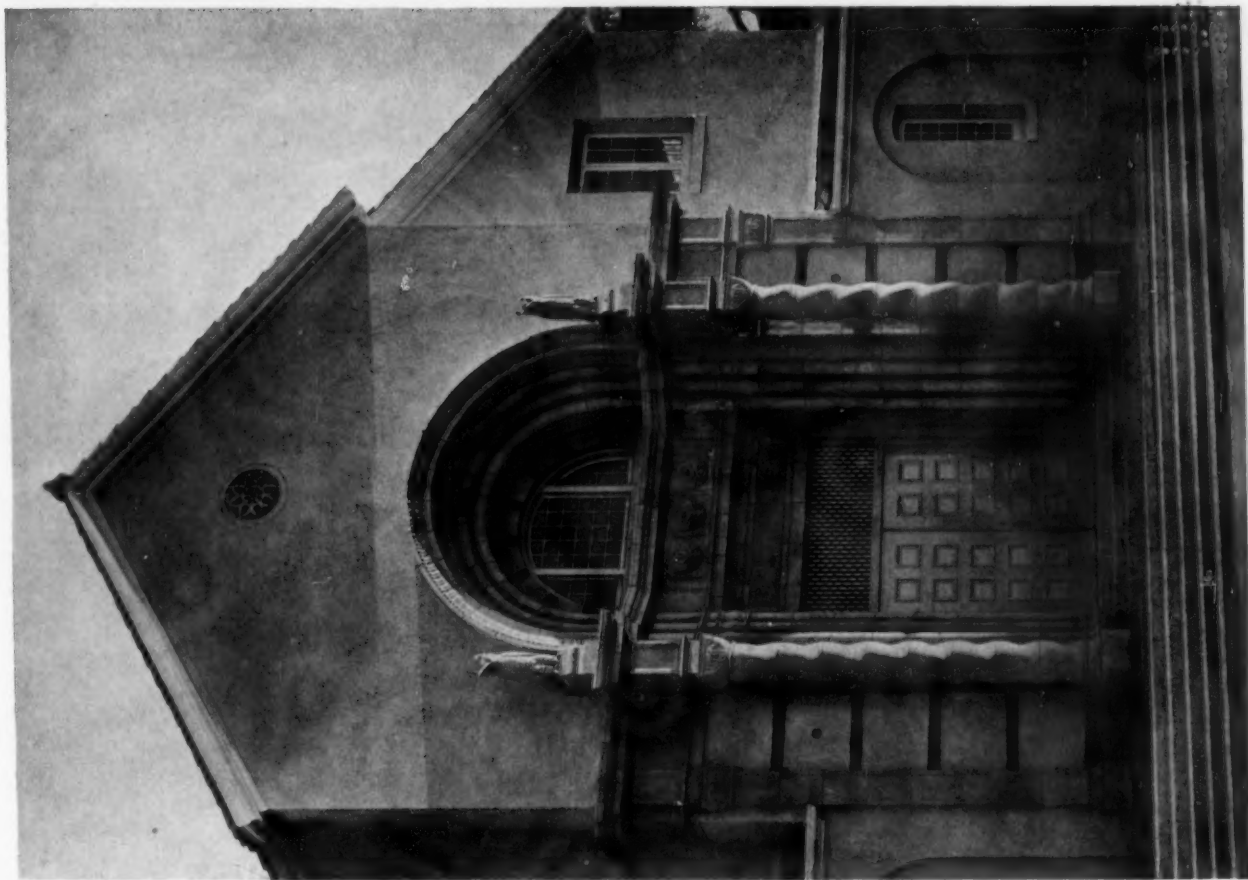


AUDITORIUM FRONT FROM NORTHWEST

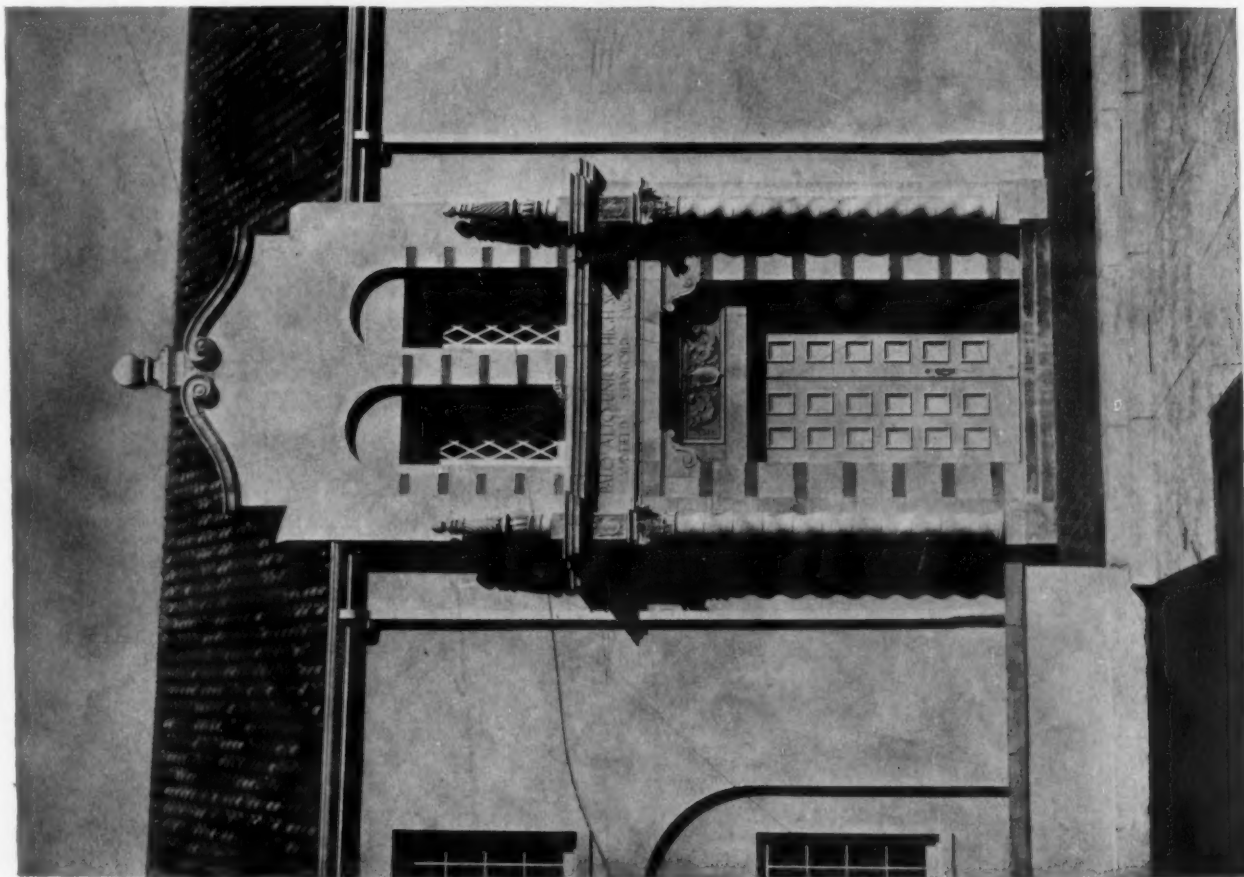


GENERAL VIEW OF SOUTHWEST FRONT
UNION HIGH SCHOOL, PALO ALTO, CALIFORNIA
ALLISON AND ALLISON, ARCHITECTS

200



DETAIL OF ENTRANCE TO AUDITORIUM



DETAIL OF ENTRANCE ON SOUTHWEST FRONT

UNION HIGH SCHOOL, PALO ALTO, CALIFORNIA
ALLISON AND ALLISON, ARCHITECTS

THE
NEW
PAPER



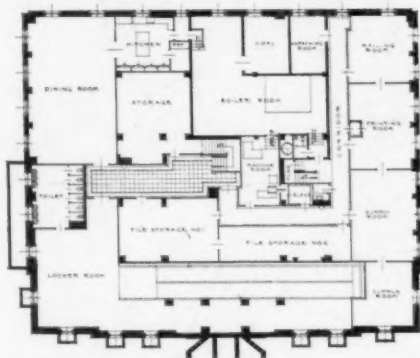
GENERAL VIEW
OFFICE BUILDING FOR WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.
RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS

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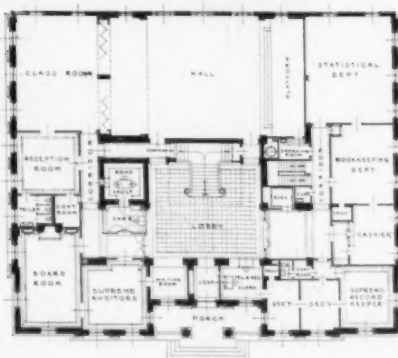
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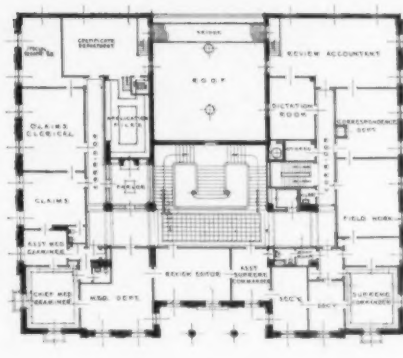
VIEW OF MAIN FRONT



BASEMENT PLAN



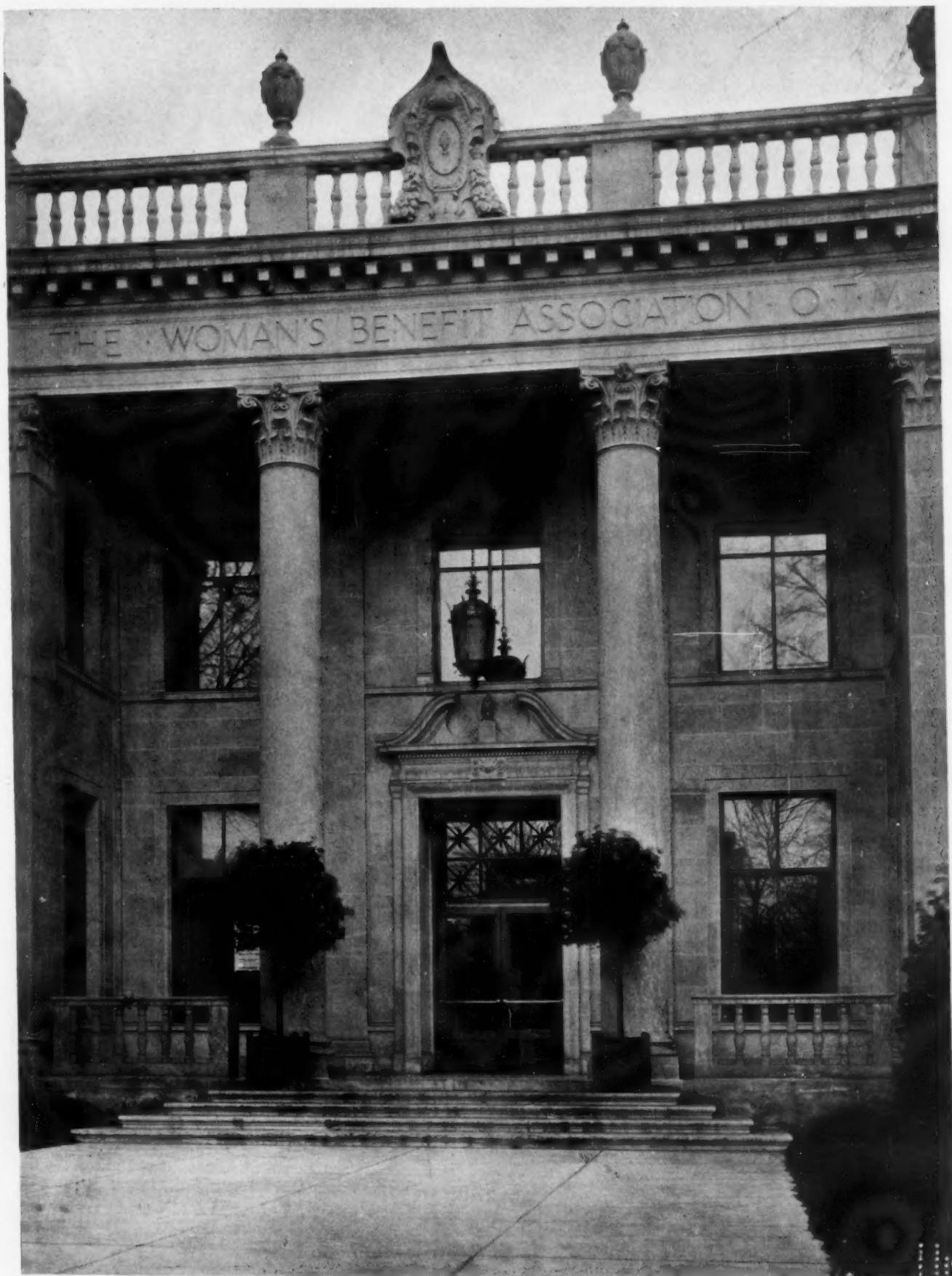
FIRST FLOOR PLAN



SECOND FLOOR PLAN

OFFICE BUILDING FOR WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.
 RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS

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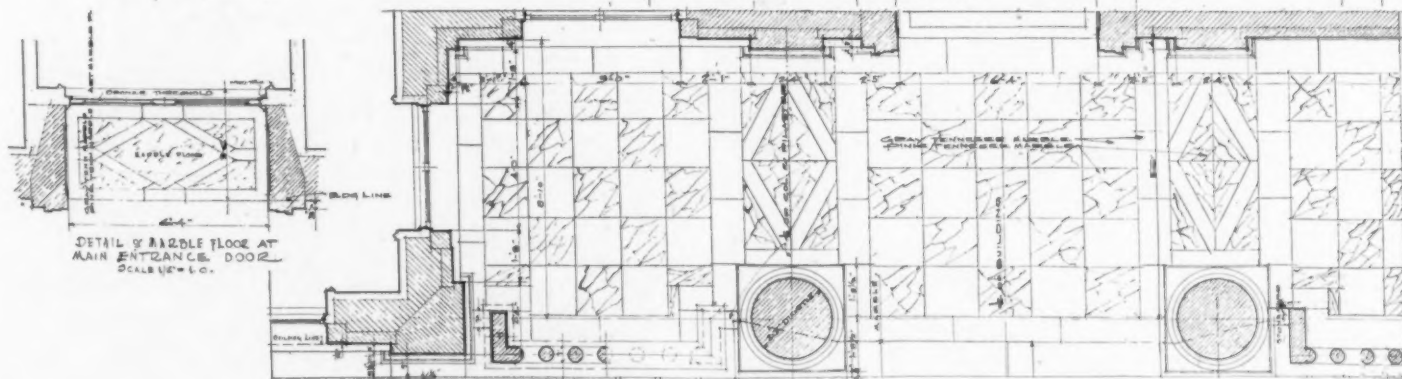


DETAIL OF ENTRANCE PORTICO

OFFICE BUILDING FOR WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.

RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS

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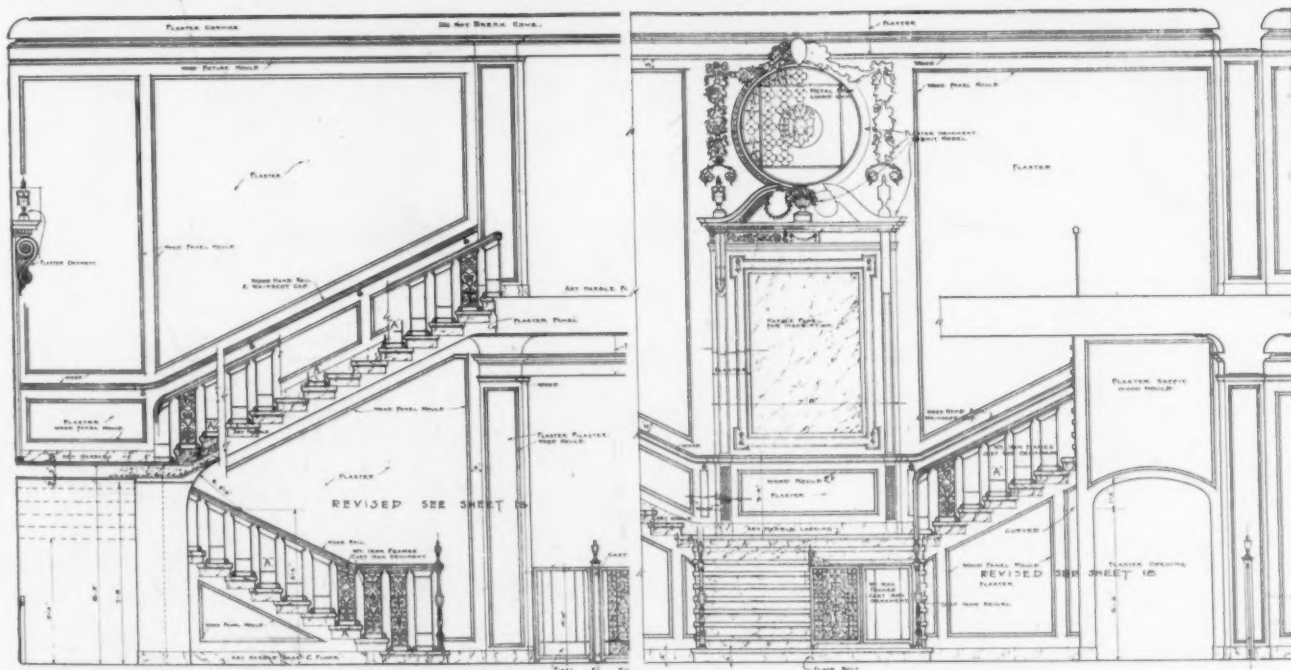


OFFICE BUILDING FOR WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.
 RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS

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VIEW OF MAIN STAIR HALL

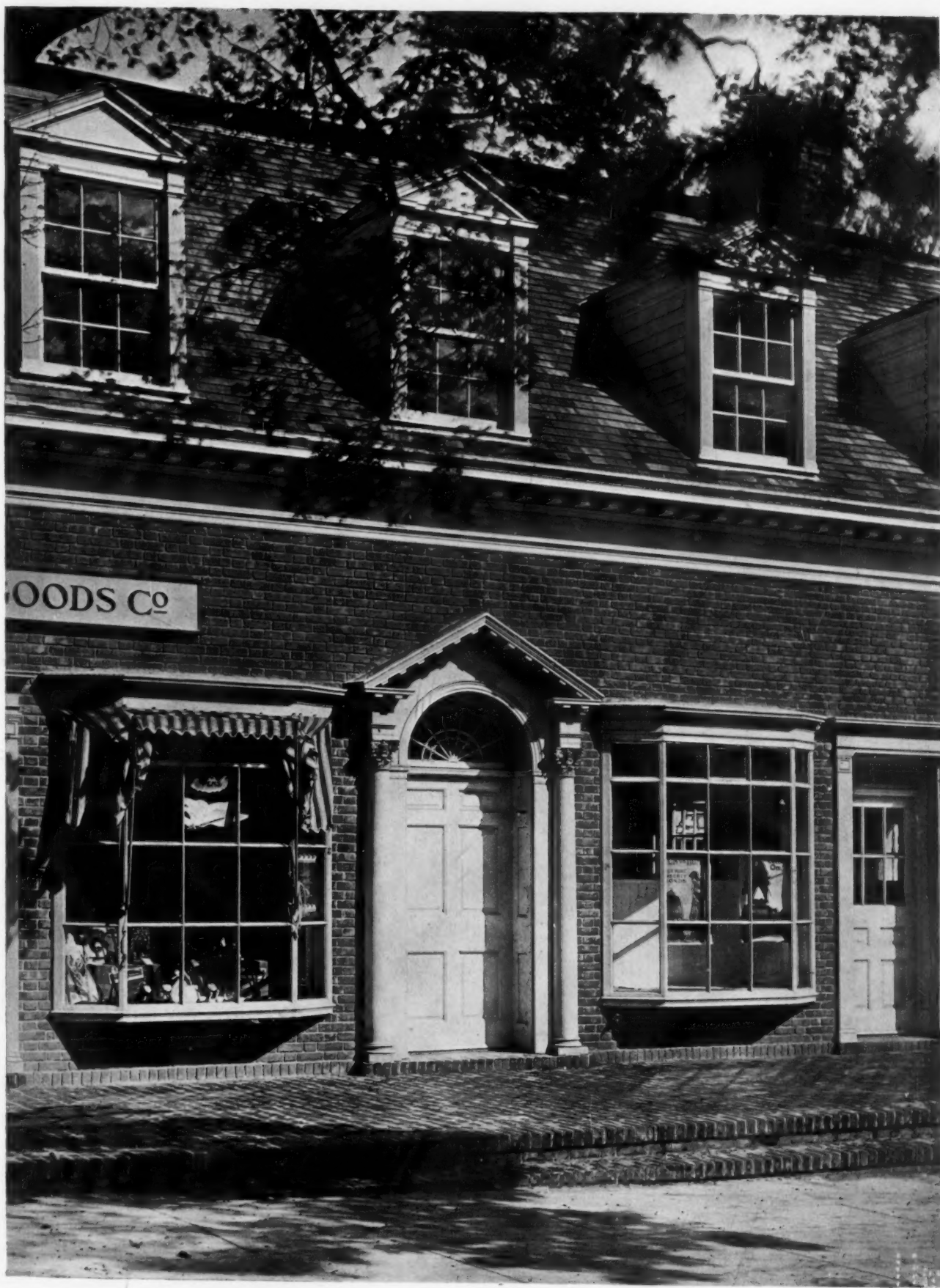


DETAIL OF STAIR HALL, SCALE OF ONE-EIGHTH INCH TO ONE FOOT

OFFICE BUILDING FOR WOMAN'S BENEFIT ASSOCIATION OF THE MACCABEES, PORT HURON, MICH.

RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS

NO



DETAIL OF STREET FRONT
COMMUNITY BUILDING AT HEMINWAY PARK, WATERTOWN, CONN.
ELECTUS D. LITCHFIELD, ARCHITECT, GUION THOMPSON, CONSULTING ENGINEER

1873

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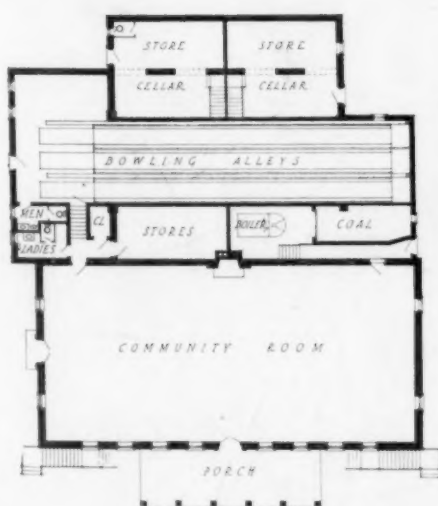
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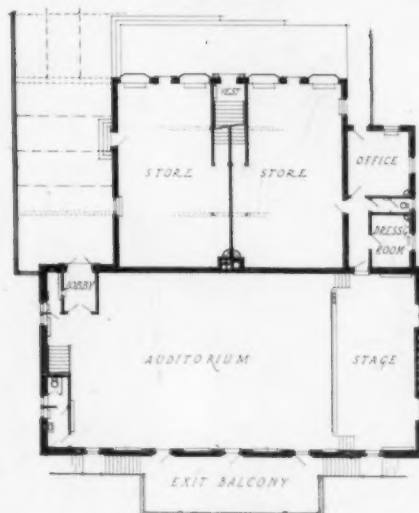
1873



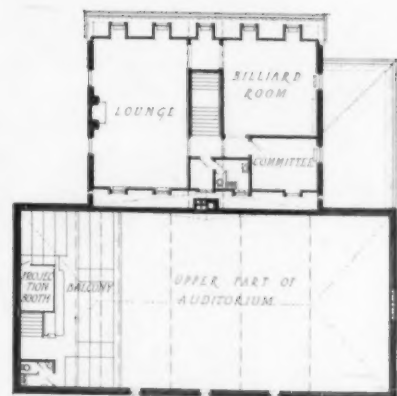
GENERAL VIEW



BASEMENT PLAN



FIRST FLOOR PLAN



SCALE 0 10 20 30 40 FEET

SECOND FLOOR PLAN

COMMUNITY BUILDING AT HEMINWAY PARK, WATERTOWN, CONN.

ELECTUS D. LITCHFIELD, ARCHITECT, GUION THOMPSON, CONSULTING ENGINEER





DETAIL OF REAR PORTICO AND EXIT BALCONY
COMMUNITY BUILDING AT HEMINWAY PARK, WATERTOWN, CONN.
ELECTUS D. LITCHFIELD, ARCHITECT, GUION THOMPSON, CONSULTING ENGINEER



DETAIL OF DOORWAY TO COMMUNITY ROOM

1875
1876
1877
1878
1879



VIEW FROM APPROACH



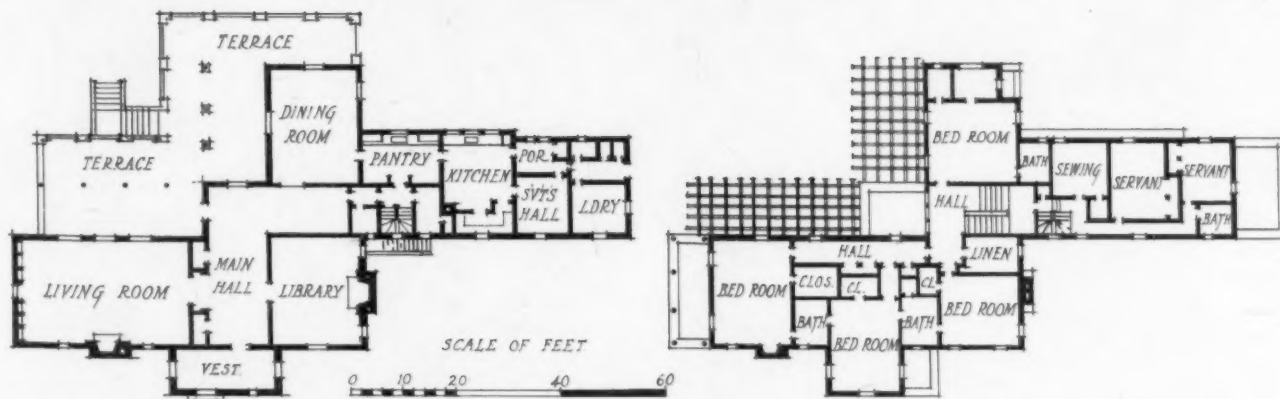
DETAIL OF ENTRANCE

HOUSE FOR MRS. R. W. RIVES, SANTA BARBARA, CALIFORNIA
REGINALD D. JOHNSON, ARCHITECT

NO



GENERAL VIEW



FIRST FLOOR PLAN

SECOND FLOOR PLAN

HOUSE FOR MRS. R. W. RIVES, SANTA BARBARA, CALIFORNIA

REGINALD D. JOHNSON, ARCHITECT

20



VIEW FROM STREET



VIEW FROM GARDEN

HOUSE FOR ANDREW MORISON, ESQ., MONTCLAIR, N. J.

WM. EDGAR MORAN, ARCHITECT



VIEW LOOKING NORTH FROM GARDEN



DETAIL OF FRONT DOORWAY

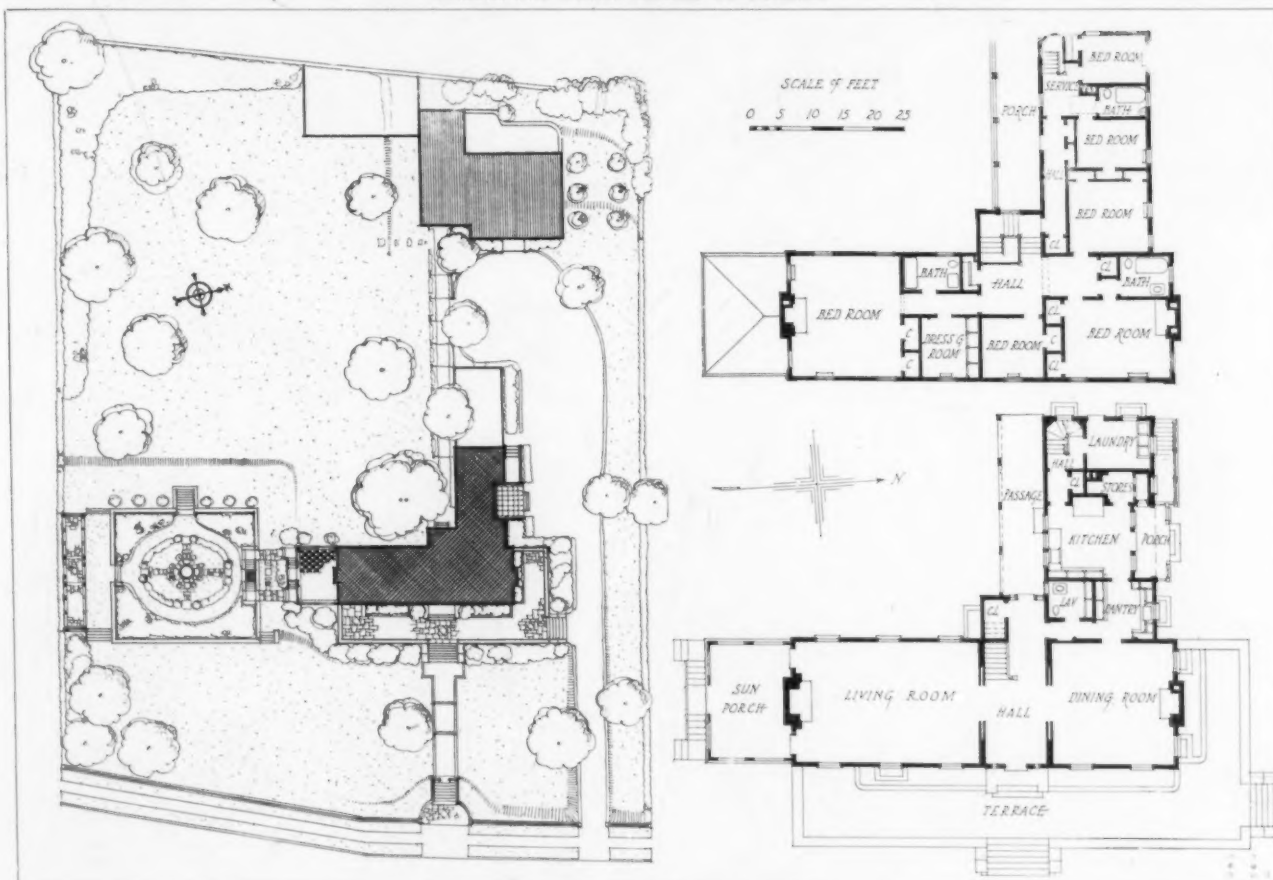
HOUSE FOR ANDREW MORISON, ESQ., MONTCLAIR, N. J.

WM. EDGAR MORAN, ARCHITECT

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ARBORWAY FROM HOUSE TO STABLE.



LAYOUT OF GROUNDS AND FLOOR PLANS
HOUSE FOR ANDREW MORISON, ESQ., MONTCLAIR, N. J.
WM. EDGAR MORAN, ARCHITECT

Proposed General Accounting and Cost System for the Michigan Society of Architects*

At a meeting of the Michigan Society of Architects in State Convention, held at Grand Rapids in 1916, the Chairman of the Committee on Forms and Documents called the attention of the convention to the fact that architectural practice might be strengthened and stabilized, and suggested that the convention recommend to the members the adoption of uniform records and accounting systems, as in this manner the individual would be able to compute accurately his costs instead of guessing, and in some instances not even guessing as to the value, but eking out some sort of an existence, believing he was making a fair margin of profit.

A motion was made that a committee be appointed for the purpose of gathering information from various architects as to methods in use in their several offices. A committee, consisting of Mr. Dalton R. Wells of Detroit, Mr. H. L. Meade of Grand Rapids and Edward C. Van Leyen as chairman, was appointed.

A circular letter was prepared, asking several questions relating to accounting methods, also requesting any further information architects had on the subject. So many replies were received, together with forms and suggestions, that the committee readily found that it had been appointed to a task requiring expert accounting experience. It was then determined to consult with Mr. Frederick A. Tilton, of the firm of Hollis, Tilton & Porte, chartered accountants, of Detroit. After a consultation,

the committee turned over to Mr. Tilton all of the information obtained from the various architects, so that he might read, study and learn the needs of an architect's office, and design a system and forms to be used for the purpose of accounting and record keeping and to be embraced in a report which the committee could accept and recommend.

Mr. Tilton entered upon his work with unusual interest and the result was that when the convention met we had this very able report to submit. As stated in the report, the system is so designed that any part of it may be adopted for use, depending upon the size of the office and the exactness with which an architect might desire his records kept. The report was submitted to the convention held in Detroit in February, 1918, and it was unanimously decided that it opened the way for further discussion and a report upon uniform practice and documents.

A new committee was appointed as follows: Mr. A. E. Munger, Bay City, Michigan; Mr. Leon Coquard of Detroit, Michigan; and Edward C. Van Leyen of Detroit, Chairman.

Believing that the report contains matters of interest to other architects of the United States, it is presented herewith in full for wider distribution.

EDWARD C. VAN LEYEN,
Chairman.

*To the Committee on Costs,
Michigan Society of Architects,
Gentlemen:*

In accordance with your instructions, we submit herewith an outline of an accounting system with suitable forms for use in an architect's office. This system is designed for adaptation to any sized office and for that reason may seem somewhat complex for use in the smaller offices, and too simple for the larger. For this reason we do not claim for it universal adaptability without the use of ordinary judgment, but feel that it will serve as a practical basis for amendments to meet both extremes, at the same time making available a common standard for the majority without change.

The subject is presented in the following sequence:

- Standard Chart of Accounts,
- Definition and Purposes of the various Accounts,
- Special forms of General Records with instructions as to uses,
- Special forms of Time and Cost Records with instructions for cost finding and distribution of overhead.

The General Records conform to general accounting practice and include the following loose-leaf forms:

BOOKS OF ORIGINAL ENTRY

- Cash Received Record
- Check Register
- Purchase Record and
- General Journal,

all of which it is proposed be kept in one binder, with the several sections separated by special tabs designating each, also:

POSTED RECORDS

- General Ledger

Accounts Receivable Ledger

Expense Ledger,

which also may be contained in one binder with distinguishing tabs for each.

Supplementing the General Records are furnished:

- Imprest Cash Receipt Forms
- Imprest Cash Envelopes
- Voucher Folder
- Voucher Index
- Pay Roll Sheet
- Approval Stamp,

the uses of which are defined in order.

The Time and Cost Records include the following:

- Daily Time Tickets
- Overtime Tickets
- Semi-monthly Time Summary
- Work in Progress Ledger,

which are described in order.

The General Records as arranged contemplate keeping the books on the so-called accrual system. That is, accrued but uncollected earnings and accrued but unpaid expenses are taken into account at the end of each accounting period (month). The purpose of this is to incorporate in each period the relative earnings and expenses whether paid or not. Of course if any firm pays all of its expenses promptly each month the cash basis will furnish accurate operating results and the method of accruing expenses is unnecessary. In this case the Purchase Journal may be discarded. We find, however, that few firms do actually pay all of their expenses in the month in which they are incurred and therefore advise the adoption and use of all the present forms.

The Time and Cost forms are designed to show the distribution of productive or direct time by man-

hours spent on individual engagements. The engagements are designated by job or file numbers. Briefly, the procedure is as follows, and for convenience we will refer to the working unit as a draftsman, although a superintendent or principal is supposed equally to report his working time.

The draftsman indicates on his daily time slip (Form 1-A) the time spent on each engagement during the day. The smallest time unit is a quarter-hour. He then posts at the close of each day to the semi-monthly time summary (Form 2) the total time spent on each engagement. On the 15th and 31st of each month respectively, the time summary is cross-footed and extended at the man's hourly rate. Allowable time not chargeable to jobs is collected together, to complete the draftsman's time record and total pay. So far we assume the general adherence to (a) the hourly-rate basis of pay, (b) semi-monthly pay days and (c) straight time for over-time. Deviations from these and means of meeting the various conditions are treated below.

The Time Summaries are posted to the respective jobs in the Work in Progress Ledger (Form 3), which contains also a page for non-chargeable time to complete the record. To this ledger is posted, also, a record of the hours spent, with provision for affixing and extending the overhead rate, also all direct charges for purchases and expenditures applicable to separate jobs. On the completion of each contract or engagement, the account is transferred by journal entry from Work in Progress Account to Cost of Completed Work. At the same time the client is charged and earnings credited for the contract amount.

Taking up the conditions created by varying office practice, such as method of spreading weekly and monthly salaries, premiums on overtime, etc., we have in their order:

Weekly Salaries. Determine the standard week-hours (45 or 48 or whatever the number) and compute the man-hour rate to the nearest cent. Charge the fractional surplus to non-chargeable time to balance draftsman's time sheet.

Monthly Salaries. Use the same method as for weekly salaries with the month hours and month rate as relative factors.

Premium on Overtime. As a rule overtime allowance is an evil created by office conditions with which no one job should be loaded. We propose, therefore, wherever overtime allowance is recognized, that it be collected separately and charged as an item of non-chargeable time (see Form 2).

Lost Time — Vacations, etc. Lost time created by sickness, vacations, etc., does not differ in character from non-chargeable office time, and is charged into the general expenses and distributed as overhead.

Distribution of Overhead. The method on which we propose that overhead be distributed is on the productive man-hour. The only other method would

be a percentage on the amount earned or on cost method which we believe would fall short of being as equitable. The General Expenses fully classified in the attached chart are treated as one group or control to which account is credited by Journal Entry the distributable overhead, the corresponding charge being to Work in Progress. We have drawn no distinction between General and Drafting Room expenses nor have we endeavored to subdivide the latter into plans and specifications sections. These are refinements which are not warranted in the average office. We have, therefore, to deal with a single overhead rate which is represented by the quotient resulting from dividing the sum of the General Expenses for any period by the Productive or Chargeable hours for the same period. To make this a matter of monthly computation involves not only a too frequent change of rate, but a degree of fluctuation which is dependent upon seasonal conditions. It is therefore urged that an estimate be made of the result covering a year's operation, which rate may be changed when the balance to the debit or credit of Undistributed Expenses is found, all things considered, to be inordinate.

We have above outlined in general the proposed schedule of accounts. On the following pages, in connection with each form, we will at risk of repetition, define the procedures still further.

Our explanations are purposely stated in elementary language to enable one not familiar with accounting terms to understand them. We are confident that these forms properly used will enable any firm of architects to arrive at accurate cost and accounting results in the individual office and believe that a general study and recognition of the procedures will open the way to standard practice and comparative statistical information.

Respectfully submitted,

HOLLIS, TILTON & PORTE.

Detroit, Michigan, February 5, 1918.

STANDARD CLASSIFICATION OF ACCOUNTS FOR ARCHITECTS' OFFICES GENERAL ACCOUNTS

ASSETS		LIABILITIES	
1	Imprest Cash	100	Accounts Payable
2	Cash in Bank	110	Salaries Payable
10	Accounts Receivable	120	Sundry Creditors
20	Sundry Debtors	130	Accrued Expenses — Unpaid
30	Work In Progress	140	Reserve for Depreciation
40	Cost of Completed Work	150	Capital
50	Investments	160	Surplus
60	Equipment	170	Profit and Loss
70	Undistributed Expense		
EARNINGS			
200	Fees		
210	Interest and Discount		
220	Miscellaneous		

EXPENSE ACCOUNTS

*Analysis of Charges to Account No. 70 —
Undistributed Expense*

- 701 Non-chargeable time of Principal
- 702 Non-chargeable time of Superintendent
- 703 Non-chargeable time of Staff
- 704 Overtime Allowance
- 705 Lost Time, Vacations, etc.
- 706 Office Salaries
- 707 Rent
- 708 Printing and Stationery
- 709 Drawing Materials
- 710 Telephone and Telegraph
- 711 Memberships and Dues
- 712 Light and Heat
- 713 Insurance
- 714 Automobile Expense
- 715 Contributions
- 716 Traveling
- 717 Periodicals
- 718 Legal and Accounting
- 719 Taxes
- 720 Depreciation of Equipment
- 721 Bad Debts
- 722 Miscellaneous Office

DEFINITION AND PURPOSES OF THE
VARIOUS ACCOUNTS

Imprest Cash. This is a fund set aside for use in the office in taking care of petty expenditures, such as express charges, freight, towel-supply, etc. The fund is of a round amount, say twenty-five dollars. When depleted, reimbursement is effected by drawing a check for the exact amount of the disbursements in the name of "Imprest Cash." Imprest Cash Receipt (Form 4) with Summary (Form 5), being an envelope for enclosing same, is submitted herewith.

Cash in Bank. Modern practice contemplates the depositing in bank of all receipts of cash in the same form as received, whether in currency, coin or checks. The Cash Received and Check Register (Forms 6 and 7) herewith contain columns for the proper recording of all bank deposits and withdrawals.

Accounts Receivable. This account represents the collective amount owing by clients. To it is charged all fees and advances for clients' accounts, and credited the sums received in payment thereof. An auxiliary ledger containing an account with each client is kept, the sum of the balances in which are supposed to be at all times in agreement with the controlling account.

Sundry Debtors. This account contains all charges for advances of money or other items not relating to clients. Unless they become too numerous, one page in the General Ledger will suffice for all individuals, provided each entry is described. When and if they become too numerous, a separate or auxiliary ledger may be opened as in the case of Accounts Receivable.

Work in Progress. This account should be charged

first with the inventory value of all work in progress. Thereafter, all charges arising through cost of work as direct or productive time, overhead, etc., are charged at the end of each month as collected or summarized from the individual time summaries. When any contract is finished, that portion of the Work In Progress represented thereby is credited to this account and a corresponding charge made to Cost of Completed Work. Form 3 herewith styled "Work in Progress Ledger" is intended to serve for the individual contracts. The sum of the balances in the latter should at all times be in agreement with the Controlling Account.

Cost of Completed Work. This account, as, implied represents the cost of contracts, all work on which has been finished. The account is closed once a year to Profit and Loss.

Investments. Charge to this account any outside investments, as Liberty Bonds, Stock, Debentures, etc.

Equipment. This account represents the asset value or cost of furniture, library, typewriters, instruments, rugs, antiques, safe, automobile, etc.

Credit the account with sales of any of the above.

Undistributed Expense. It is considered that all expenses are an asset ratable to the Work In Progress in the method above described.

Charge this account with all expenses accrued. A complete classification is furnished, which classification is spread by means of an Expense Ledger (Form 8) herewith, to show monthly comparisons. This ledger is to be kept in balance with the charges to the Controlling Account.

Credit the Controlling Account with the distributable overhead at the established rate as above described.

Accounts Payable. All purchases of labor, material, supplies, etc., as well as rent and interest, create a temporary liability. This liability is entered through the Purchase Journal (Form 9) and a corresponding charge made to the proper accounts. The Voucher (Form 10) herewith is a medium of entry with space for expense distribution. The total unpaid vouchers represent the Accounts Payable.

Salaries Payable. Except for statement purposes the Accounts Payable or Vouchers will serve as an adequate record of all liabilities. Because of the legal preferment surrounding wages and salaries, a separation should be made of the latter for statement purposes only.

Sundry Creditors. This is an account corresponding to Sundry Debtors except that here the prevailing condition of balances is on the credit or liability side. The drawing accounts of the proprietor or members of the firm are carried in this group.

Accrued Expenses Unpaid. Certain accrued expenses are impossible of final determination sufficient to insure accurate vouchering at any closing date. These include liability for taxes, interest, insurance,

etc. Estimates are therefore made and corresponding entries so as to show the approximate liability and corresponding charges to expense.

Reserve for Depreciation. Credit this account once each year with an amount representing the ratable depreciation for the year. The corresponding charge is to expense.

Capital. This represents the original investment of proprietor or members of the firm. Where there is more than one member it is necessary to show

each member's investment on a separate account.

Surplus. Carry to this account the net profits or net losses for the fiscal year. Charge all distribution of profits as made.

Profit and Loss. Charge to this account the balance of "Cost of Completed Work" account at the close of each year, as well as balances of all earnings accounts. In addition to these any adjustments of assets and liabilities which are not taken into expenses are made through this account.

FORM 6.											
CASH RECEIVED <u>January</u> 19 <u>18</u>											
MEMO. BANK BALANCE OR BANK CO. REC.	BANK DR.	CASH DISCOUNTS ALLOWED DR.	DAY OF MONTH	CREDIT TO	FOR WHAT	ACCT. NO.	GENERAL LEDGER CR.	ACCOUNTS RECEIVABLE CR.	PRIVATE LEDGER CR.	CR.	
Totals Forward											
210.00				5 Williams Dairy	On account			50.00			
	50			Murphy Estate	Estimate 10			50.00			
	500.00			J. Smith	on acct		100.00				
	100.00										

Form 6. Record for Cash Received

CASH RECEIVED. Form 6 above is a record of all cash received, whether in the form of money or checks. It is counter-balancing, having two debit columns and several credit columns. It is intended that all cash be deposited in bank. If more than one bank is used, an extension of this form should be arranged with a separate column for each bank.

The credit columns are the General Ledger and Accounts Receivable. All cash received from clients should be entered in the latter column and posted to

the clients' account therefrom. Items of a special nature, such as cash received from loans, sale of equipment, etc., should be entered in the General Ledger column, and posted to the proper account in the General Ledger.

At the close of each month, in addition to the entries in the General Ledger column, there should be posted the total of Bank Debits and Accounts Receivable credits to the respective accounts in the General Ledger, completing the double-entry for this feature.

FORM 7.											
CHECK REGISTER <u>January</u> 19 <u>18</u>											
CHECK NO.	CR. BANK	CR. DISCOUNT	DAY	CHARGE TO	ACCT. NO.	DR. VOUCHERS PAYABLE	DR. GENERAL LEDGER	DR. ACCOUNTS RECEIVABLE	EXPENSE LEDGER		
TOTALS FORWARD											
1	20		1	John Smith	Advanced			20.00			
2	25.00			Detroit Board of Commerce - Dues 7/11						25.00	
3	170		3	Murphy Estate	Bill No 26				170		
4	49.50			Multi Color Copy Co.	Dec. Acct	49.50					
5	599.20		15	Pay Roll	Pd ended 1/15	599.20					
6	25.20			Gregory, Mayor & Thoma	Dec 7/1	25.20					
7	25.75			Mich. State Tel. Co	Jan. 7/1	25.75					
8	18.20			Imprint Cash	No 1	18.20					
9	54.25			Union Trust Bldg Co	Rent Jan	54.25					

Form 7. Typical Check Register Page

This form is arranged with two credit and several debit columns and is counter-balancing. In the credit column are entered the amounts of all checks drawn. The Discount column is a record of cash discounts deducted on all remittances. The Debit columns are: Vouchers Payable, in which are entered all sums in payment of bills for supplies, payrolls,

Postings are made to the General Ledger similarly to the method described in the case of Cash Received.

Form 9. Typical Purchase Record Page

First, however, it is necessary to distribute the expense to determine to what account the amount should be charged. Space is provided on the Voucher for this purpose. The numbering of the General Ledger, as well as the Expense Ledger Accounts, is intended to facilitate the work of distribution. Not only are purchases of sup-

The vouchers are to be filed in a vertical document file and suitably indexed as per Form II herewith. Before filing they are folded horizontally and the outside face carries a summary of the data within so they may be examined without removal from the file.

Stamp for Approval of Invoices

Form 11. Index Card for Vouchers
as Filed

SMITH AND JONES
DETROIT, MICH.

Entry No. _____ Voucher No. 3

AMOUNT - - - \$ 25.75

LESS - - % Dict. _____

NET - - - \$ 25.75

In Favor of

NAME Mich. State Telephone Co.

ADDRESS Detroit, Mich.

Month of January 1918

Entered Expense Ledger E.C.D.

Paid Jan 6, 18 By Draft No. 6

On _____

DISTRIBUTION		Amount	Totals
John Smith		3.00	
File 25		2.00	
File 26		5.75	
Exp. 710		15.00	
			25.75

SMITH AND JONES
ARCHITECTS & ENGINEERS
DETROIT, MICH.

EXPENSE VOUCHER
FORM 10.

IN FAVOR OF Michigan State Telephone Co.

MONTH OF January 1918 ADDRESS Detroit, Mich.

Date	PARTICULARS	Invoice No.	Amount	Totals
Jan 5	Bills Rendered			25.75

CORRECT: E.C.D. AUDITED: D.S. APPROVED FOR PAYMENT: _____

BOOKKEEPER MANAGER TREASURER

DISTRIBUTION		Amount	Totals
John Smith		3.00	
File 25		2.00	
File 26		5.75	
Exp. 710		15.00	
			25.75

Form 10.
Voucher for Entry
of Individual
Accounts at
Top Right

Outside Face
when Voucher is
Folded and Filed
Shown at Left

GENERAL JOURNAL. This record (Form 12) is used to take up such entries as do not come under the preceding classes, viz.: Cash Received, Cash Disbursed and Purchases. This will include such entries as charges to clients for completed work, closing out completed work from Work In Progress to Cost of Completed Work, etc., etc.

Opening and closing entries are effected through this record. For instance, the first entry on opening the books will be to charge the asset accounts and credit the liability accounts as shown in the example on this form.

The posting is made from this form to the General Ledger and auxiliary ledgers for Work In Progress and Accounts Receivable as previously described in connection with other records.

FORM 12

JOURNAL ENTRIES January 1918

DR. ACCOUNTS RECEIVABLE	DR. WORK IN PROGRESS	DR. GENERAL LEDGER	ACCT NO.	ACCOUNT DEBITED	DATE	ACCOUNT CREDITED	ACCT NO.	CR. GENERAL LEDGER	CR. WORK IN PROGRESS	CR. ACCOUNTS RECEIVABLE
				<u>TOTALS</u>	<u>January 2, 1918</u>					
				35.00		Imprest Cash				
				250.00		Cash in Bank				
				1500.00		Accts Receivable - per Ledger				
				50.00		Working Orders - John Smith				
				3400.00		Work in Progress - per Ledger				
				100.00		Investments - Liberty Bonds				
				1000.00		Equipment				
				50.00		per statement on file				
						Vouchers (Accts Payable)		650.00		
						Working Orders		70.00		
						J. T. Jones				
						Expense for Shop		100.00		
						Capital		2000.00		
						John Smith 1000.00				
						J. T. Jones 1000.00				
						Surplus		27.05		
								25.75		
						<u>January 10 - 1918</u>				
						Accts Receivable				
						Monroe Auto Company				
						for fee on per contract				
						To				
						Fees		600.00		
						Cost of completed Work				
						To				
						Work in Progress			300.00	
						To close out Job 25				
						Monroe Auto Co. - now complete				
						<u>TOTALS</u>				

Form 12.
Typical Journal Page
at left showing opening
entries as described
in text

[illegible]

Form 4. (At Right)
Receipt for Cash Expended

Form 4

IMPREST CASH VOUCHER

No. 2

January 2, 1918

RECEIVED FROM Smith & Jones

12 35

Two & 35/100

DOLLARS

FOR Additional on building permit

CHARGE ACCOUNT Murphy Estate

ENTERED ON SUBSISTY BY ST

APPROVED ST

SIGNED: Dept of Building

By JED

Form 5. (Above)
Monthly Summary of Imprest Cash
on Envelope Containing Receipts

IMPREST CASH FORMS. These consist of receipt (Form 4) and Imprest Cash Summary (Form 5). The operation of this fund is described on page 15. The purpose of it is to provide petty cash for current use without interfering with incoming funds. Reimbursement is made out of funds in bank in the amount shown by the envelope or summary. The latter is then attached to the voucher (Form 10) entered on Purchase Record and filed away with the receipts enclosed.

LEDGER FORMS. The following records are contained in one binder and use identical forms:

General Ledger (Form 14)

Accounts Receivable (Form 14)

The following are contained in the same binder and use special forms:

Work In Progress Ledger (Form 3)

Expense Ledger (Form 8)

Each section is separated from the other by suitable index sheet with tab to indicate the section.

With the exception of the General Ledger, all are auxiliary to the controlling accounts 10, 30 and 70 respectively of the Chart of Accounts. In this respect they contain only the charges and credits which are made to the controlling accounts, but the entries are spread to show the analysis of the latter.

Of the several ledger forms the Work In Progress Ledger is perhaps the only one requiring explanation. An account is kept with each Job or File Number to show the cost of same. Postings are made from Time Summaries and Vouchers and the overhead costs are entered at the determined rates in accordance with the productive hours. When the job is finished, the account is closed by crediting Work in Progress and charging Cost of Completed Work, and the sheets removed to a transfer file.

[illegible]

Form 8. Typical Expense Ledger Page

FORM 3		SMITH AND JONES ARCHITECTS & ENGINEERS DETROIT, MICH.		CLIENT OR OWNER <u>Murphy Estate</u>		FILE NO. <u>25</u>		
		JOB COST SHEET WORK IN PROGRESS				SHEET NO. <u>1</u>		
DATE	PAY ROLL			OVERHEAD		DIRECT CHARGES		TOTAL
	EMPLOYEE	HOURS	RATE	AMOUNT	RATE	AMOUNT	VOUCHER NUMBER	
1918	Forward from old ledger							
Jan 15	Alvin Kuttler	47	.60	28.20	33.3	15.66	3	Addition on Permit
	J. Weber	61	.50	30.50	"	20.33	3	Car fare
	G. Hughes	80	.40	8.00	"	6.66	6	Blow Point
	L. Hicks	15	.40	6.00	"	5.00		
	J. Smith	10	.50	5.00	"	3.33		
	Totals			122.70		50.98		
								10.35
								194.03
								494.03

Form 3. Work in Progress Ledger

SHEET NO.		NAME <u>Work in Progress</u>		ACCOUNT NO.	
		ADDRESS <u>Controlling Account</u>			
DATE	FILE	DEBITS	BALANCE	CREDITS	DATE
1918					
Jan 2	Paul Old L. J.	340.00		300.00	J. Monroe Auto Co Jan 10
Jan 31	Accts Pay	422.00	6040.00	1250.00	J. 2 Molor Sugar " 31
		762.00			

Form 14. Identical Form for General Ledger and Accounts Receivable

TIME RECORDS AND SUMMARIES. The first operation in the recording of time is to indicate on the Daily Time Record (Form 1A) the time spent on each particular job. This form is used by all employees as well as the principals. A separate form is furnished for overtime work (Form 1B).

The total hours shown on the Daily Time Records is posted to the Semi-Monthly Time Sheet (Form 2). Paid-for time not chargeable to jobs is entered under non-chargeable time at the bottom of the sheet. Twice a month these sheets are extended and footed, the result being, in the case of hourly rate men, to accrue the amount earned. In the case of salaried men payable weekly or monthly, a method of pro-rating above described is to be used.

The amounts representing cost of time spent on each job are posted to the Work In Progress Ledger (Form 3). The non-chargeable time is

posted to the Expense Ledger under accounts 701 to 705 as the case may be. On the Pay Roll (Form 13) herewith the time of all men is collected; this is then attached to voucher for payment. The general distribution is shown on the voucher, for entry in the Purchase Record, the secondary distribution already having been made to Work In Progress and Expense. This completes the record of costs for time.

FORM 1A.		SMITH AND JONES ARCHITECTS & ENGINEERS DETROIT, MICH.	
DAILY TIME RECORD			
NAME <u>Alvin Kuttler</u>	DATE <u>Jan 9, 1918</u>		
HRS.	FILE	REMARKS	
7.00			
7.15			
7.30			
7.45			
8.00			
8.15			
8.30			
8.45			
9.00			
9.15			
9.30			
9.45			
10.00			
10.15			
10.30			
10.45			
11.00			
11.15			
11.30			
11.45			
12.00			
12.15			
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12.45			
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2.30			
2.45			
3.00			
3.15			
3.30			
3.45			
4.00			
4.15			
4.30			
4.45			
5.00			
5.15			
5.30			
5.45			
6.00			
APPROVED BY <u>AS</u>			

Form 1A. Daily Time Record

FORM 1B.		SMITH AND JONES ARCHITECTS & ENGINEERS DETROIT, MICH.	
OVER-TIME RECORD			
NAME <u>Alvin Kuttler</u>	DATE <u>Jan 9, 1918</u>		
HRS.	FILE	REMARKS	
6.00			
6.15			
6.30			
6.45			
7.00			
7.15			
7.30			
7.45			
8.00			
8.15			
8.30			
8.45			
9.00			
9.15			
9.30			
9.45			
10.00			
10.15			
10.30			
10.45			
11.00			
11.15			
11.30			
11.45			
12.00			
APPROVED BY <u>AS</u>			

Form 1B. Overtime Record

FORM 2

SMITH AND JONES
ARCHITECTS & ENGINEERS
DETROIT, MICH.

PERIOD COVERED January 1 to 15th 1918

NO. 1

TOTAL HOURS RATE .60

SEMI-MONTHLY TIME SUMMARY

EMPLOYEE Wm. Kettler

NAMES OF CLIENTS	FILE NO.	DAYS																															TOTAL HOURS	FOR OFFICE USE ONLY	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		AMOUNT	POSTED
Murphy Estate	25	2	10	10	10	10	5																									47	28 20	✓	
Monroe Auto Co.	15	3																						6								9	5 40	✓	
Williams Dairy	26																							6	8	8	8	8			9	55	33 00	✓	
Holovine Sugar Co.	27																							2	2	2	2	2			13	13	7 80	✓	
TOTAL CHARGEABLE TO CLIENTS																																124	74 40		
NON-CHARGEABLE TIME OFFICE TIME		3																														3	1 80		
OVERTIME ALLOWANCE			2	2	2	2																	4	2	2	2	2	2			4	26	7 80		
LOST TIME, VACATIONS, ETC.																																			
TOTAL NON-CHARGEABLE																																			
TOTAL HOURS																																127	84 00		

Form 2. Semi-Monthly Time Sheet

PAY ROLL

SHEET NO. 1

FOR THE HALF MONTH ENDING Jan 15 1918

Form 13

EMP. NO.	NAME	OCCUPATION	EARNINGS			DEDUCTIONS AND ADVANCES			BALANCE	CHECK NO.
			HRS.	RATE	AMOUNT	MEMO.	AMOUNT	CHECK NO.		
		FORWARD								
	John Smith	Proprietor			150.00				150.00	
	J. T. Jones	"			150.00				150.00	
	Wm. Kettler	Draftsman			84.00	Cry	5.00		79.00	
	J. Weber	Do			75.20	Subscription May	2.00		73.20	
	B. Hughes	Do			65.00				65.00	
	L. Weeks	Do			52.00				52.00	
	Laura Ferguson	Stenographer			30.00				30.00	
	Total				606.20		7.00		599.20	
		Distribution								
	Murphy Estate	File 25			122.70					
	Monroe Auto Co.	" 15			148.20					
	Williams Dairy	" 26			75.30					
	Holovine Sugar	" 27			36.00	381 %				
	Office Time	Asst 70			120.20					
	Office Time	" 703			18.00					
	Overtime Allowance	" 704			17.00					
	Lost Time	" 705			69.80	225.00				
	Total				606.20					

Form 13. Pay Roll Form for Semi-Monthly Payments

Building Construction in 1919

WITH the war ended our thoughts naturally turn to the re-establishment of normal peacetime pursuits and the restoration of losses caused through directing all our energies to the war's prosecution. We have now entered the first year of the reconstruction period, and though sufficient time has not elapsed from the signing of the armistice for the readjustment of many industrial factors which are necessary to a complete resumption of pre-war activities, there are enough indications of the probable trend of events to make a brief study of future conditions of some value.

Architects have felt, more keenly than any others associated with the building industry, the depression caused in it by the war. While the actual restrictions imposed by the Government on building were of short duration, the whole period since the outbreak of the war in 1914 was distinctly unfavorable to building, at first because of high money rates and difficulties connected with financing, and later because of extraordinarily high prices of labor and materials coupled with a shortage of workers.

This has caused a lack of buildings of all types extending quite generally through the country, which has not been relieved in any large measure by the construction carried on by the Government, for this in all cases was to meet special needs of war and was in great part only temporary and incapable of serving any other purpose. There is, therefore, a most insistent need for much new building, notably work of municipal character, schools, office buildings and apartments in the larger cities, and small, comfortably appointed houses in practically all sections.

Previous to the war the annual expenditures for building in the United States greatly exceeded \$2,000,000,000. A study of statistics covering the last four years shows a marked decline in building figures until, in 1918, a small fraction of the normal amount was reached, when the Government's program is left out of consideration. During this period the population has been increasing, and under normal conditions there would have undoubtedly been a proportionate increase in the amount of building over what was usual in the years previous to 1914. We have, therefore, this greatly decreased production which must be balanced in the near future, and it is not unreasonable to expect the next few years to record building expenditures that will exceed by a very large margin our previous highest figure.

There are, furthermore, many additional factors which make this course probable. During the war our manufacturers were spurred on to rates of production they had not accomplished before, and many additional workers found employment in our great industries. This greater effort has made possible

larger earnings for both capital and labor and they are both concerned in continuing large production. This can only be accomplished through building up foreign trade with many outlets for our manufactured goods that previously we did not consider necessary. This expansion of business is already taking place and its effect on the demand for additional warehouses and factories will soon be felt. It is even now exemplified in the rapidity with which space being released by the Government is taken up.

There has also been a very perceptible increase of wealth in the country and a wide circulation of money, much of it passing into new hands that are ready for its investment in new buildings. The farmers of the country are notably more prosperous than in many years; they have also been educated through the work of the Department of Agriculture and the various state schools of agriculture, to look upon better farm buildings as a necessity for securing a proper return from the soil, making the general improvement of farms a most likely result to follow the war. Works of important civic character are being urged at the moment in many localities as essential to aiding the economic situation raised by the demobilization of large numbers of soldiers, and because of the ease with which we have financed huge war loans, the difficulties generally associated with financing these enterprises will not seem so great that they cannot be overcome.

On the other hand some apprehension is felt over the high prices of both labor and materials in force today. We have been told of the stand labor has taken with respect to any reduction in rates of pay or change in hours from the general standards that were gained during the war, but while aggressive labor unionism may be much in evidence, it cannot by any means control the entire situation; it is difficult to get away from the old law of supply and demand, and if there is any prolonged period where the supply of labor greatly exceeds the supply of jobs, the price of labor will react accordingly, without much reference to previous plans to the contrary. There can, however, be no drastic reductions in wages until the cost of living has been reduced, and this depends in turn so much upon the extent we will be called upon to supply food to Europe, that no sense of definiteness can be given any opinion.

The prices of some of the basic building materials have already been reduced and with the resumption of full capacity production, denied most of them through the war period, and the replenishment of stocks, some further reductions may be expected. There is no early possibility of their returning to much lower figures and probably no possibility of their receding to pre-war levels, at least for years to come.

Steel Framing for Long-Span Construction

ACCOMPANIED BY DRAWINGS SHOWING SOLUTIONS OF TYPICAL PROBLEMS

By N. A. RICHARDS, ASSOC. MEM. A. S. C. E.

WHEN floor systems were constructed largely or entirely of wood and supports of wood and brick, clear spans between supports were naturally and effectively limited by the strength of the material, or by the bulk of members of large strength. Architects and engineers who had only these materials to work with for the structural features of their buildings did not have to consider or speculate very much on the desirability or profit of keeping the show windows in their stores clear of piers or columns, nor on the probable increased rental value of their office or loft space, if forty-foot clear spans were provided on each floor, instead of twenty-foot. The materials they were working with carried their own limits. Today, however, with steel and concrete in almost universal use in the frames of the better classes of buildings, the question of "can a thing be done?" is almost eliminated and the real points at issue are "is the thing desirable and is it of economic advantage?"

Office and loft buildings are commonly built with about eighteen or twenty-foot spacing of columns, sometimes less. Keeping the column spaces small, of course, decreases the size and weight of the steel beams and girders and hence is economical in the first cost of the framework. However, there is another side to the question. Interior columns at best are obstructions in the floor space, particularly when the occupancy and partition arrangement of each floor is not determinable in advance. The elimination, or at least reduction in number of the interior columns, may make all the difference between an attractive and usable floor space and a poorly arranged and impossible layout for a prospective tenant. With steel framing it is possible to go to almost any length in the elimination of columns. The real basis for determining the point is, will this or that arrangement pay? Will the rental value of the floor be increased if two lines of interior columns be used instead of three or four? Will the probable increased rental value more than pay for the carrying charges on the extra cost?

Take a typical case of a corner lot fifty feet wide and one hundred feet deep. The service for the building, the elevators, stairs, toilets and smoke-stack are usually grouped along the inside wall of the building and near the center, leaving the fronts free for offices or open lofts. A longitudinal line of columns is naturally placed at the inside edge of the service space, or, say nineteen feet from the inside lot line, leaving thirty-one feet to the outside lot line. If the line of columns along the street front is one foot six inches from the building line, there

remains a span of twenty-nine feet six inches which must be crossed in the clear, or else an intermediate line of columns must be introduced. Suppose there are five interior lines of columns across the short way of the building, making six spans of approximately sixteen feet each. On a span of twenty-nine feet six inches the girders in an office building, with a total load per square foot of one hundred and sixty pounds, would be twenty-four inch I's weighing one hundred pounds per foot; whereas, if the span be divided by an intermediate line of columns the girders would be fifteen-inch I's weighing forty-two pounds per foot. The longer span consequently means an increase in the steel of the difference in the weight of the girders, or about four and a quarter tons per floor. With steel at \$65 per ton erected (a normal figure before the great increases incident to the war), this means \$276 per floor. The cost of fire-proofing and plastering would also be slightly increased. If the foundations were on soil, requiring cantilevers along the lot line, it might also mean some increase there owing to the extra load thrown on the outside columns. Probably \$370 would represent the maximum increase per floor for any usual case. It would, therefore, only be necessary to increase the renting value of the floor, say five per cent of \$370, or \$18.50 per year to cover this increase. The attractiveness of the floor area free from interior columns would undoubtedly give a greatly increased value to the building as a renting proposition. The figures indicate that an absurdly small increased rental would pay for the carrying charges on the extra cost. Even taking into consideration wartime prices of perhaps \$110 per ton for steel the increased rental required is still nominal.

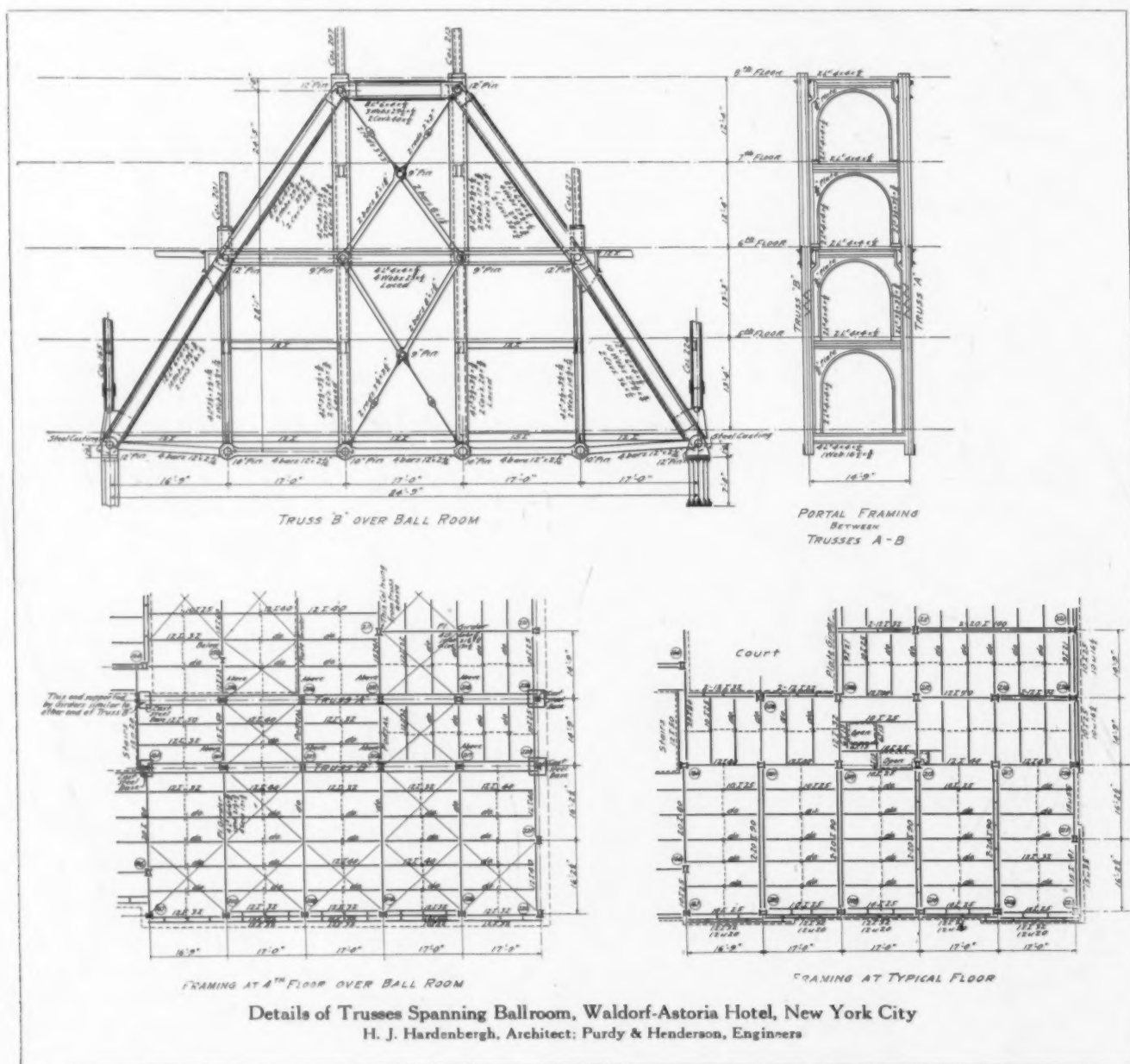
There is one further point to be considered which might in some cases add to the cost of the building. The long-span girders in the example given above are nine inches deeper than with the short span. The floor system between the girders is the same in either case. For some purposes it might be required to keep the story height beneath the girders at a fixed figure. In this event the total height of each story would have to be increased by nine inches if the long span were adopted. This increase would cost about \$200 to \$500 per story, depending upon the character of the walls and partitions. But even this would require only a small additional rental to cover. If a sprinkler were used in the building it would be quite possible, with practically no extra expense, to cut holes in the webs of the girders and run the pipes through them, thus avoiding pipes below the girders.

In hotels, clubs and other buildings of a public character where large meeting rooms and dining rooms occur, it is always desirable to eliminate the columns in such rooms. Take the case of a hotel where the upper floors are arranged in regular wings for the accommodation of bedrooms. It is usual to space the columns in the upper part of the building to fit the room and corridor layout, and to step off such columns as interfere in the large rooms by means of girders and trusses, transferring their load to columns which can run down without interference. If the columns to be carried in this way are heavy, or if it is desirable to avoid using deep girders over the large rooms, it is sometimes possible to work in trusses with the bottom chords in one floor and the top chords in another. One of the early cases of an arrangement of this sort, and a case remarkable for the great size and weight of the trusses, is in the

Waldorf-Astoria Hotel, New York City. Trusses spanning eighty-five feet and four stories in height carry the columns over the ballroom. There are two trusses, each carrying four columns. The portion of the hotel in which these occur was built about twenty years ago, and the trusses are of the pin-connected type.

Another example is found in the Copley-Plaza Hotel, Boston. One truss of eighty-six foot span and two stories in depth was used to carry columns over the main dining room, and smaller trusses of forty-seven foot span and one story in depth cross the tea room and carry the columns above. In each case passageways are provided through the trusses, the corridor passing through the smaller ones.

Another type of building where the elimination of columns has grown to be a necessity is the theater or auditorium. By a careful study and arrangement

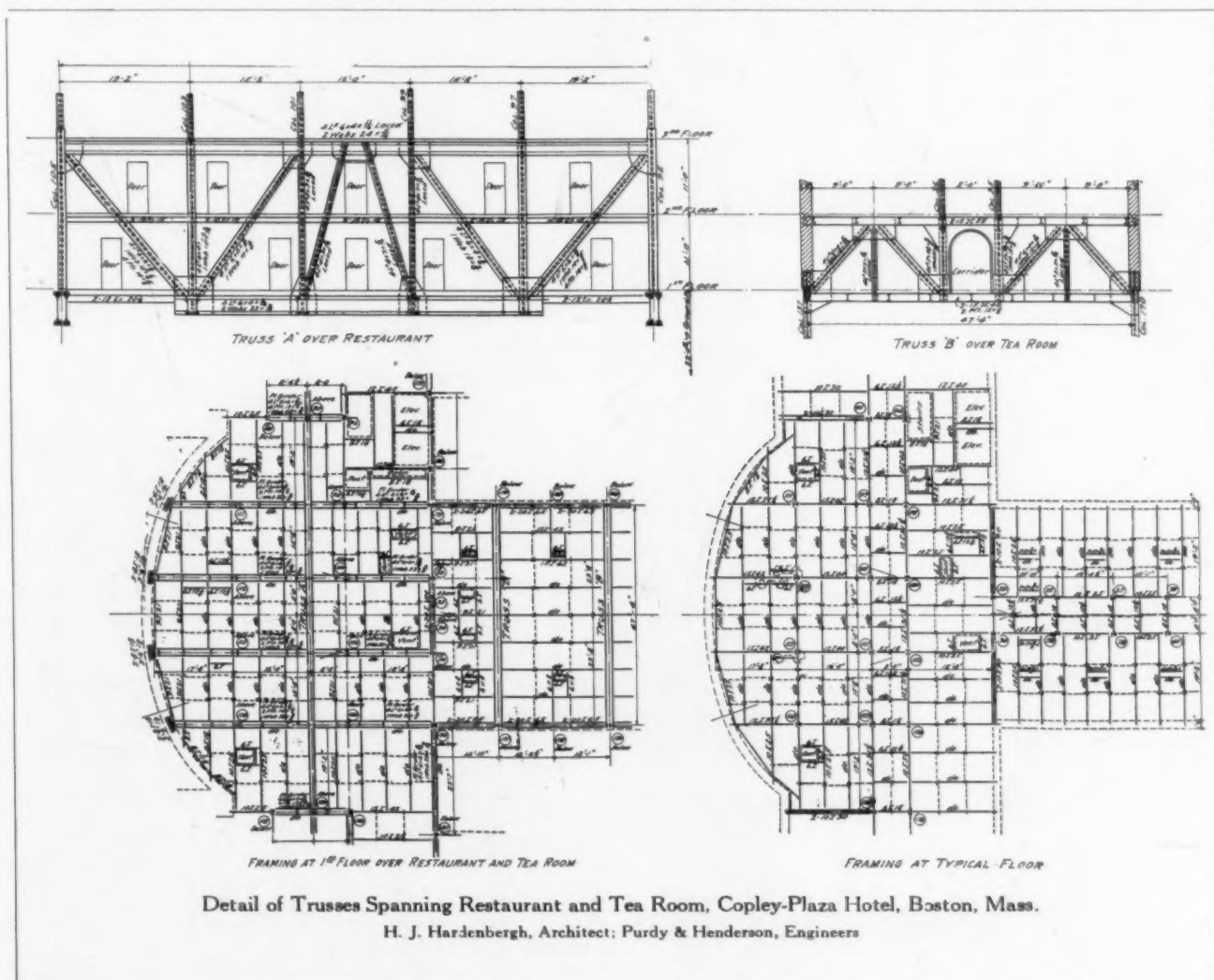


of the lines it is possible, in any ordinary case, to obtain sufficient room in the balcony and gallery construction to allow of girders or trusses spanning from side to side of the building, thus eliminating the columns which in the older theaters are extremely objectionable, particularly if one is unfortunate enough to be seated behind one. The illustration from the framing of the Princess Theatre, Montreal, will indicate how the framing was handled in this case to accomplish the desired result. Fulcrum girders span about ninety feet from side to side of the house, and the cantilever girders for the balcony and gallery are framed through these. The cost of this type of construction, against the lighter framing with interior columns to support the balcony and gallery, would not be more than \$5,000 or \$10,000 in any usual case, and the theater is made vastly more attractive. Furthermore, the stiffness of the entire framework is really improved by the deeper construction necessary in this type of framing.

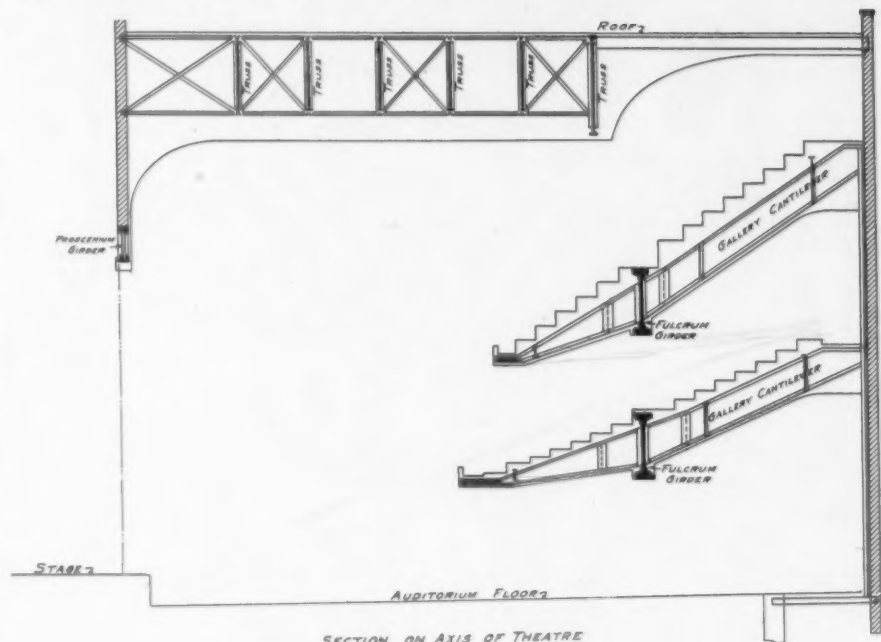
Great improvement can often be effected in the arrangement of store fronts by decreasing the number of wall columns or eliminating the intermediate ones entirely in the first story. This can be done

by using steel girders at the second or third-story levels, concealed behind the usual heavy cornice bands at one or the other of these levels. An excellent example of the way in which this can be handled, even with a building of considerable height, is found in the Bonwit-Teller store building, New York City. Two girders side by side on a span of about seventy-six feet are placed at the third-floor level, where a heavy architectural band course occurs, and carry the intermediate columns. The second floor, along the street front, is then hung from the girders and no intermediate columns appear in the show windows. This would be somewhat difficult and expensive where the foundations were on soil or piles, as very heavy loads are thrown to the corners of the building and must be cantilevered in again to the footings. In the case in question, however, the foundations were on rock, and practically the only increased expense was in the steel, which amounted to about \$7500.

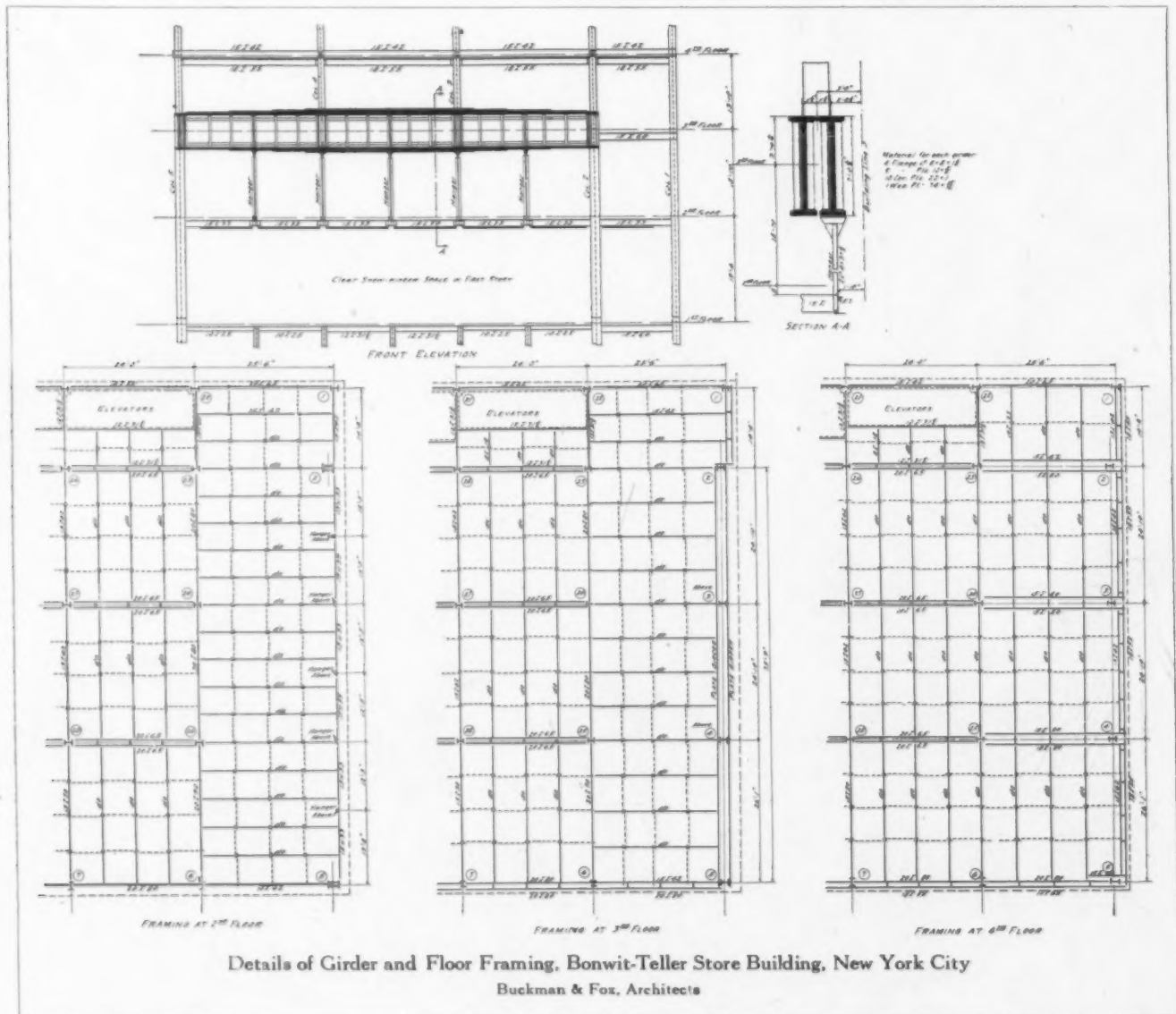
In shops and manufacturing buildings the spacing of the columns is largely determined by the size and arrangement of the machines and by the requirements of the shop operation. The question of the exact

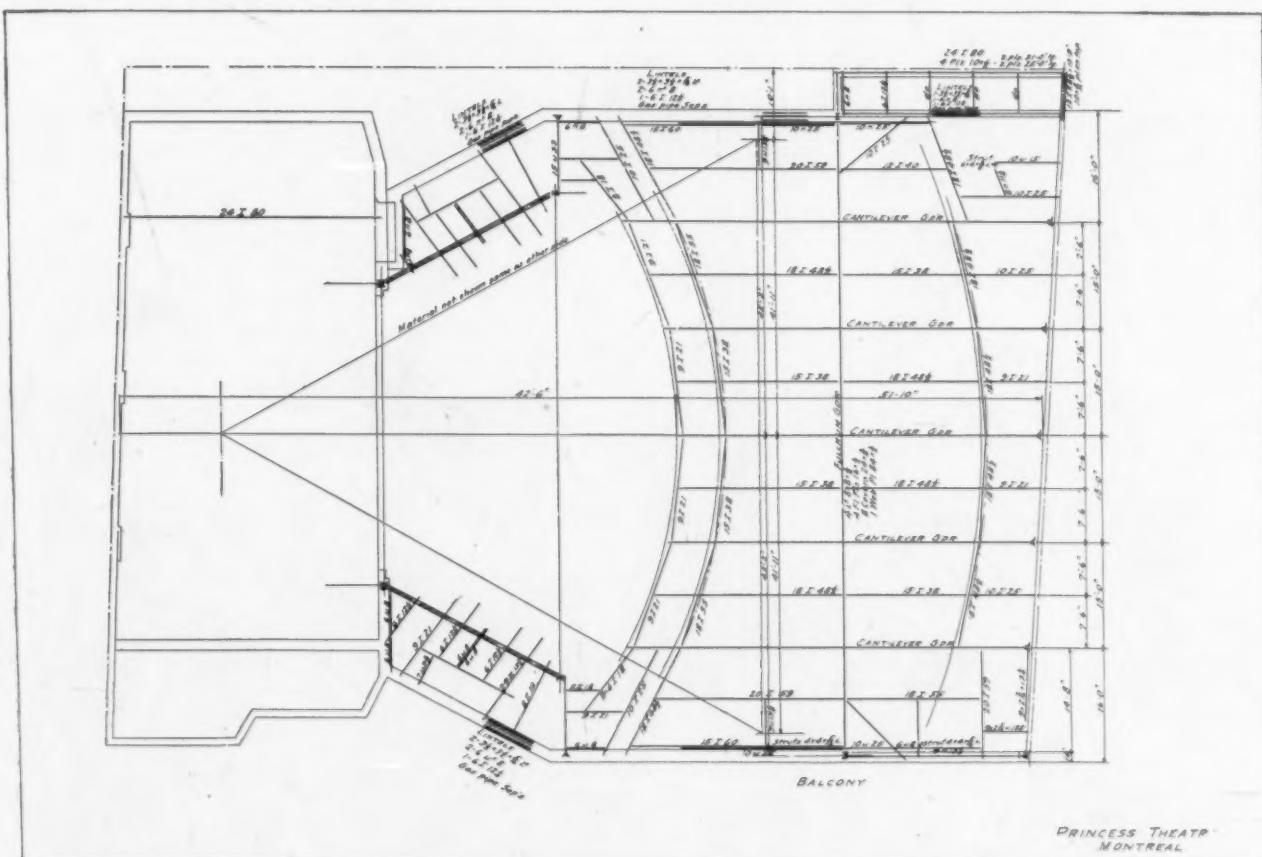
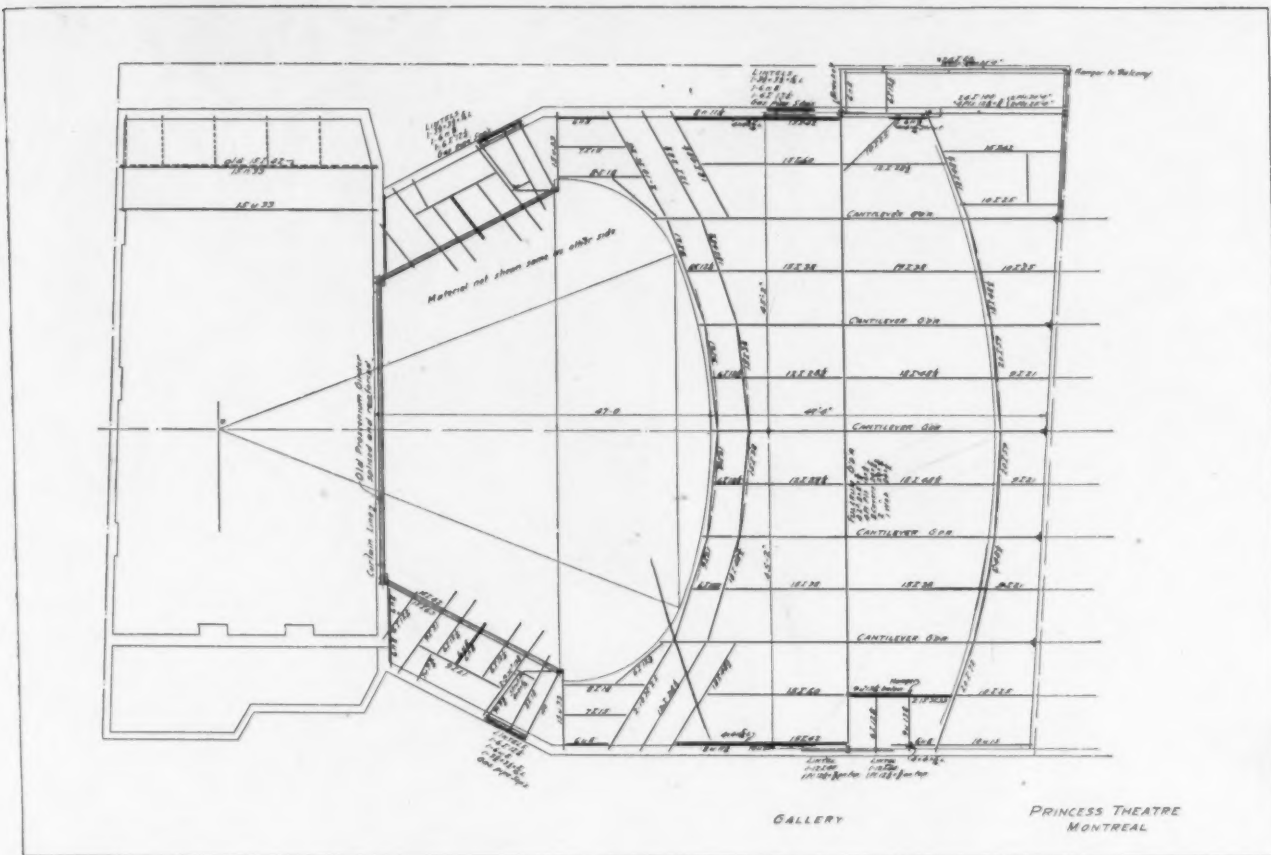


economy of the building construction is not so much a determining feature here. It might not be far amiss to reverse the common way of looking at the matter and to consider all buildings, whether office, hotel, residence, store or what not, just as the engineer does the factory: make the building fit its particular work and probably the real economy will be found in doing that. The construction that best fits its purpose, which calls for attractiveness and flexibility in the office or public building as surely as in the residence, is the best investment. A judicious use of wide spans, with the consequent elimination of columns, will often help measurably in the accomplishment of this end.



SECTION ON AXIS OF THEATRE
Princess Theatre, Montreal, Canada





Balcony and Gallery Framing Plans, Princess Theatre, Montreal, Canada
D. J. Spence, Architect; Purdy & Henderson, Engineers

Building of the Arts and Crafts Society, Detroit, Mich.

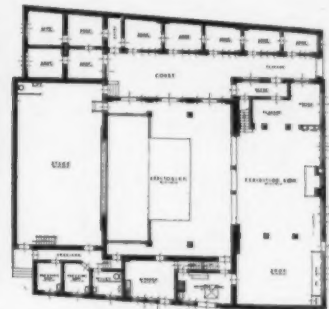
SMITH, HINCHMAN & GRYLLS AND WILLIAM B. STRATTON, ARCHITECTS



General View of Street Facade



Second Floor Plan



First Floor Plan

THIS building is of especial interest because of the greater attention that will undoubtedly be shown the arts and crafts movement following the war. It is well planned for carrying on its activities, it combines in a successful degree the requirements of store, shops

and general meeting and exhibit space. The construction is of masonry with stucco coating and tile roof. The interiors are simply done in stained woods and rough plaster. The view shown is of the first floor exhibition room or the street front.



Notes on the Government Housing Developments

THE war brought to hopes of reality no greater good than the beginning of a movement for better housing among the working people of the United States. It required that serious emergency with the absolute necessity of producing the sinews of war in terms of ships and munitions to make it appear proper for the Federal Government to interest itself positively in helping supply proper housing accommodations. This action on the part of the Government was noted with particular satisfaction by the architectural profession, for it knew the good results that had been obtained in England and European countries through a wise housing policy, and foresaw lasting benefits that could be derived here through similar means.

The work of the Government was only well under way when the signing of the armistice caused the pendulum to swing in the opposite direction, threatening the speedy resumption of our former indifference. It was good judgment on the part of the Housing Corporation that dictated the cancellation of contracts on developments just started and those in early stages of construction, where the immediate necessity for houses was removed, but later events beyond that body's control indicate the intention of forcing drastic curtailment and a disregard for expert advice.

The agencies charged with carrying out the housing program are composed of men who brought to their work a greater spirit of service and better preparation for fulfilling their duties than probably those of any other war emergency board, and their counsel should be considered in any retrenchment plans deemed necessary. They were charged with investigating all requests for relief of housing congestion and shortage, and only after careful surveys covering the use of surrounding territories that might be made available through better transportation facilities, or a reduction of plant production to accord with available housing accommodations, where such reduction did not jeopardize the essential demands of war, did they recommend the construction of houses, and then only in such localities as showed a continuing need for accommodations was permanent construction considered. This was eminently a conservative policy and one, which if followed to a logical conclusion, could not entail loss to the Government.

The factors which dictated the action of the housing commissions in establishing developments might now with reason be considered when the ending of the war removes the necessity of speeding up munitions production and consequently the Government's immediate interest in housing, but the character of procedure that may take place, if not offset by public opinion, is indicated by the resolution recently passed by the

Senate calling upon the Housing Corporation to stop all work not seventy per cent completed, irrespective of its location or possibility of meeting an established peace-time industrial demand, with the thought that enterprising builders will take over the uncompleted houses at some figure acceptable to the Government.

If this means of disposing of the developments is determined upon it will be most unfortunate for the cause of good housing in the United States. These developments were conceived by the best architectural talent in collaboration with town planners and engineers, and if permitted to be completed will present in tangible form, the best modern thought on the housing problem. If not completed and sold as they now stand, they will in all probability fall into the hands of real estate speculators devoid of any appreciation of the ideals built into them, who will use them as a means of securing the utmost financial return from those who happen to occupy them.

We cannot believe that this will be the policy adopted. The latest reports from the daily press that the House of Representatives' Committee on Public Buildings and Grounds advocates the completion of a selected list of the developments, indicates that the general disapproval of the Senate's resolution injected a more constructive note in the consideration of the problem and it is hoped this favorable action may prevail.

The start of a great housing program has been made and only a cursory examination of results already achieved shows the value derived from the co-ordination of forces which the Government, because of the emergency, was able to assemble. Proper housing is one of the important factors in preventing labor unrest and building better citizenship, and as such, it merits the serious consideration of the nation. It is a new problem to us and though it was an important part of our war preparations, its complete solution cannot be expected at once. Important steps toward a solution have been made and they must be preserved; we cannot revert to former indifference. The governmental developments should be carried to completion where their continued use is assured, thereby furnishing a practical application of ideals, needed to establish a public appreciation of good housing.

The following letter received from Mr. Robert D. Kohn, lately associated as Chief of Production with the Housing Division of the Emergency Fleet Corporation, written in response to a request from the editors for a brief statement of present indications of the development of a definite policy, shows the need for interest on the part of the public. Architects have a special opportunity of furthering this worthy movement by exerting their influence toward building up an intelligent public conception of it.

Editors, The Architectural Forum:

The situation with regard to the housing developments started by the Government during the war is still too indefinite to make it possible to anticipate the policy that will be adopted. The next few weeks will probably determine one way or another just what is to happen. There are, however, a few salient points, reference to which in THE ARCHITECTURAL FORUM would have value, because of the effect that an aroused public opinion on the subject might have upon the Government's policy.

With regard to the work of the United States Housing Corporation, which dealt with accommodations for workers in the munition plants, navy, army, etc., I have no first-hand knowledge. The newspapers reported that a resolution had been passed by the Senate directing that all work of that Corporation be stopped which was not more than seventy-five per cent complete. Today's papers report that, at a hearing held yesterday, delegations appeared from several cities protesting most strongly against such action, and that the Secretary of War himself opposed action of that character, saying that the shortage of houses and other accommodations for workers at certain points was very serious, particularly in Washington, and that the need would not immediately decrease. I need hardly tell you that my own view is that it would be a most unfortunate thing to abandon work already started, on any such principle. Each situation should be looked into on its own account, and the completion or abandonment of a project should depend on whether or not the houses in each particular location may have a permanent value for industries other than war-time industries.

As for the developments undertaken by the Emergency Fleet Corporation, the situation is somewhat different. As is well known, these housing developments had progressed to a point far nearer completion than those undertaken by the other branch of the Government. In some twenty-five different centers, a total of many thousands of houses may be said to have been close to completion at the time of the signing of the armistice, and indeed, in probably half the villages, houses were actually occupied; thousands of workers were already accommodated in dormitories, hotels and apartments.

And yet despite this very advanced state of the projects undertaken for the Emergency Fleet Corporation, the success or failure of this part of the Government's housing ventures is still dependent on what is done in the future. There will undoubtedly be some sort of Congressional investigation, and unless Congress is enlightened by forceful public opinion, the investments of the Government amounting to many millions of dollars will be seriously endangered and the

future of housing reform in America seriously imperiled. These projects are advanced in general to such points that they need only the finished grading, finished street paving, sidewalks, and planting in the spring to make them physically complete. But something else is lacking in almost every one of these projects, much more serious than the absence of finished streets. I here refer to the matter of buildings to supply the need of a community life.

Through causes over which my associates and I had no control, we were prevented from carrying out a program for the construction of schools, stores, recreation places, etc., which features are absolutely essential to the success of the various communities established near the shipyards. I need hardly argue this point. At a recent date, there seemed to be a possibility of securing schools for the various sites, but even these have hardly advanced. Already the effect of the absence of these community features is evident. And unless the need is immediately supplied and Congress permits (it would be too much to expect them to order) the construction of all those features, including hospitals, that are essential to the completion of these towns, workers will refuse in the main to move into the houses and the loss will be colossal.

There is one other thing that needs to be done and which also, through no fault of my associates, has too long been neglected. This is the need for a definite and wise management policy with regard to the various housing projects of the Shipping Board.

The difference between success and failure of any particular housing development is evidently dependent, in a great measure, on the wisdom with which the property is managed and on the establishment of wise principles with regard to use of the property, restrictions as to nuisances, garages, billboards, etc., encouragement of interest on the part of the tenant in the upkeep of the property, proper rental bases, and the hundreds of other things that go to make good municipal housekeeping. As far as I know, up to the present time, there has been no general policy established on this subject, although preparation of such a policy has been urged for six or eight months.

I can only echo here what was said recently to me by a Government official unexpectedly well qualified to express an opinion. He agreed with me that, unless these Government towns are actually completed so as to provide for a whole community life, and unless a wise policy of management be established, it were better for the cause of decent housing in America that the Government had never started to build any of its projects.

Yours very truly,

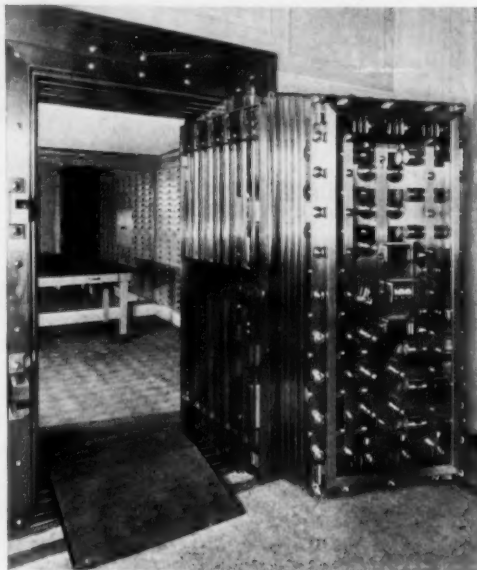
ROBERT D. KOHN.

New York, January 9, 1919

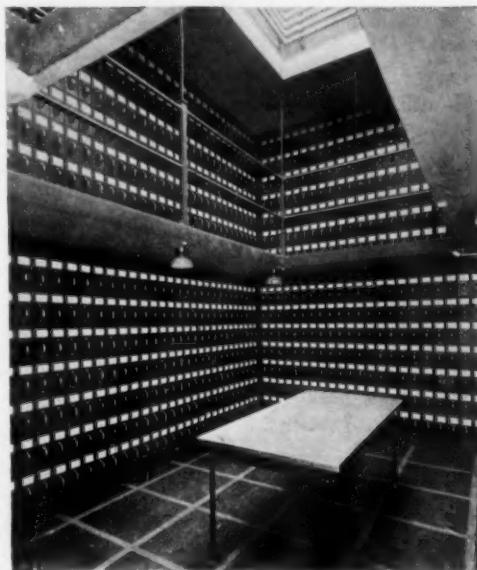
Office Building of the Woman's Benefit Association of the Maccabees, Port Huron, Michigan

SITUATED in a residential district upon the crest of a slope which rises from the bank of the St. Clair River at Port Huron, Michigan, the new Home Office Building of the Woman's Benefit Association of the Maccabees has a commanding view of the city and Lake Huron to the north. The site is a generous lot providing broad lawns dotted with shading elm trees and low shrub planting, with opportunity for other landscape development. The main facades of the building present a skilful intermingling of the three greatest Renaissance schools,— the ensemble being appropriate and dignified in its adaptation to an edifice of this type. The exterior walls are entirely of limestone and where detail occurs careful regard for the character of the material is observed.

The main lobby or grand stair hall is reached through a vestibule having two sets of bronze doors. The walls of the lobby are of domestic, green-seamed, cream-colored marble, and the floor of alternately contrasting squares of light and dark. Directly opposite the entrance, above a landing of the marble stairs is a tablet framed under a broken pediment and flanked by tall electroliers. The balustrade



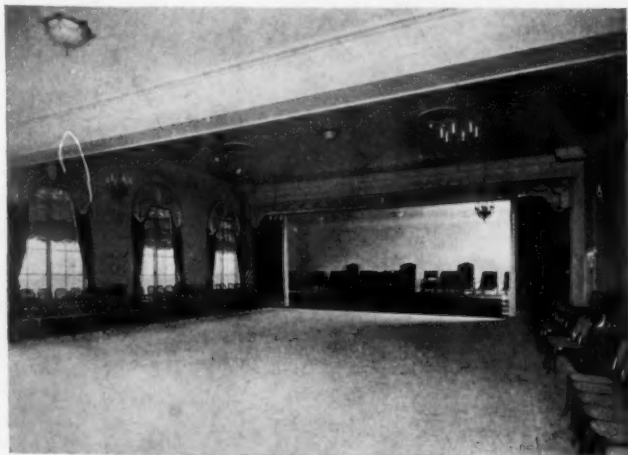
Bond Vault on Main Floor



Application File Room, Second Floor

of the stairway is of bronze and extends around the open well of the second floor. An ornamental skylight sheds a pleasing quality of light on the stairway and lobby below. Adjoining the entrance lobby are the alcoves of the reception clerk, telephone switchboard, visitors' room, and the bond vault, the heavy door of which is visible from the lobby, while corridors at either side of the stairway lead to administrative offices and the assembly hall. This spacious hall used for gatherings of field workers and social events derives its richness from its simplicity of motive and color scheme. The paneled walls are cream color, and heavy rose hangings with applique of green frame the windows and proscenium.

On the second floor, grouped about the large marble hallway, are offices of the chief executives, clerical departments, editor of the association's journal, and ladies' waiting room. The coloring throughout the building is kept in light shades of ivory, gray and green. Furniture for specific uses was designed and executed in mahogany, and the comprehensive selection of materials for their relative uses is apparent in the finest of bank fittings and steel window sashes.



Assembly Hall



General Office

Richard E. Schmidt, Garden & Martin, Architects

Editorial Comment

IT is highly gratifying to observe the interest that is being taken by the daily press and citizens in general in discussing tentative plans for War Memorials and the evident desire on the part of deep-thinking people to obtain such memorials as will be suited to a proper recognition of the valorous part played by American troops in the great war. It is everywhere recognized that a type of memorial is demanded that will differ materially from that erected by past generations in honor of previous military achievements. The principles of honor and justice, in defence of which the United States took up arms, rightfully deserve perpetuation in memorials that will truly bespeak these qualities. It is not great military conquests we will record, it is not wide extensions of empire we will commemorate, nor is it the great military capacity of any leader of soldiers we will acclaim. It is the American ideal of freedom and equality among all men, which prompted us, a nation quite removed from any immediate danger, to pour out millions of our best young men and billions of our national treasure without ever a suggestion of return, that we must memorialize. Can we interpret this spirit in a memorial that is a hollow adaptation of forms originally conceived to do homage to a conqueror of nations, or a builder of empires? Decidedly no! Such a monument cannot bespeak American ideals and will not be a true memorial to the American lives which were so gladly sacrificed for the perpetuation of American principles.

The spirit of the war has been service. Let us carry this spirit to our memorials and make them intimate parts of the lives of the people, not awe-inspiring piles of granite or marble, that may express might and power, but never the deep-felt human qualities aroused by piratical actions on the high seas, and the beast-like destruction and enslavement of Belgium.

In what way can we better proclaim our joy at the humbling of this despotic power and honor the lives sacrificed in the accomplishment of this victory than by making our cities proper dwelling places for Americans, by removing those dark, disease and crime-breeding spots to which the immigrant who comes to our shores quickly gravitates, forfeiting his opportunity of learning American customs and appreciating the value of citizenship? Must the soldier, who came from the slums with willingness equal to that of any other, return to them after serving his country and perceiving through his experiences in training camp and field the benefits derived from sunshine, fresh air and proper housing? It is to be hoped the further development of true democratic ideals will prevent it. Though we are looked upon as the most democratic of nations, we

suffered before the war from many social and racial distinctions. Many of these fortunately were leveled by the war and it should be our steadfast aim to make the sense of unity and national consciousness thereby developed a permanent reality, and as one writer has expressed it, "set against the old individualistic doctrine of the rights of man, the principle of the new freedom — the responsibilities of man." We must cultivate the spirit so ably portrayed in a sentence from Premier Lloyd George's reconstruction program, "Britain must be made a fit country for heroes to live in."

Our American cities with the exception of Washington have grown without the aid of any carefully devised plan, and even much of the possible beauty of Washington and many of its practicable working features have been lost because of unwillingness on the part of those in authority to follow the lines of development marked out by L'Enfant.

It is not too late to begin anew. We have learned from the war the value of orderly development and co-operation of forces. We have reached a new scale of financial expenditures and have been visibly affected by a new concept of democratic ideals. These influences are sufficient to overcome objections that have in the past stood in the way of municipal improvements, that would benefit the whole people. Let our desire to do honor to our soldier and sailor dead be the immediate and compelling incentive to carry out this work so badly needed.

Open up these congested portions of our cities in such a manner that their inhabitants may enjoy the benefits of fresh air and sunshine, develop arteries of communication through them that will greatly relieve the congestion which is threatening to engulf our transportation facilities, create open centers and plazas where buildings to serve the community needs may be grouped and monuments to particular deeds of valor and groups of heroes may be erected to be constant reminders to the people of the sacrifices made that our ideals might live.

Much is being said of reconstruction, the remaking of a world in which the ideals of the present age will find full representation, where truth, righteousness and freedom will obtain for all, thereby justifying the sacrifices of life that have been made in the name of these principles. We will need to perfect our development in small units before we can successfully build a new world; let our labors then begin with the city and town where much can be done to improve their physical aspects, affording all citizens the right to decent living conditions. We will thereby prove in a possible and practical way that the war has made the world better, and in so doing raise a memorial of enduring value and eminent appropriateness.